

**APPENDIX F-1**  
**Ground Water Analysis**

**GROUNDWATER RESOURCE EVALUATION**

**Peaceful Valley Ranch,  
Jamul, CA**

**TM 5341RPL5, GPA 03-05, R03-015, MUP 04-048, Log No. 04-19-007**

Prepared For:

San Diego County Department of Planning and Land Use  
Attention: Jim Bennett  
5201 Ruffin Road Suite B  
San Diego, CA 92123

March 22, 2007

On Behalf Of:  
Peaceful Valley Ranch, LLC

Prepared By:

**Wiedlin & Associates, Inc.**  
*Applications in Groundwater Science*

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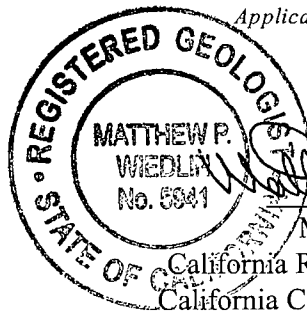
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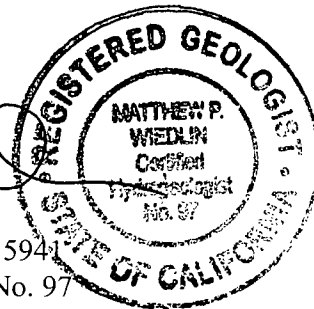
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*Matthew P. Wiedlin*  
Matthew P. Wiedlin  
California Registered Geologist, No. 5941  
California Certified Hydrogeologist, No. 97



## **EXECUTIVE SUMMARY**

This report provides an evaluation of groundwater resources and an assessment of impacts related to groundwater production to irrigate 12.8 acres of turf that are part of the proposed 181-acre Peaceful Valley Ranch subdivision. The project water demand estimate developed for the Otay Water District (OWD) indicates that approximately 153 acre-feet of water per year will be required for the entire development including 32 acre-feet per year to irrigate the 12.8 acres of turf that is part of an equestrian polo facility. Through waste water discharge and percolation of irrigation water, the importation of OWD water to the project site is expected to create an additional 22.2 acre-feet per year of groundwater recharge beyond existing groundwater recharge rates. The project plans to pump a maximum of 22.2 acre-feet per year of groundwater to partially meet the 32 acre-feet per year estimated irrigation requirement for the equestrian polo field. At the onset of development, the project plans to start groundwater pumping at 10.65 acre-feet per year. This is the rate calculated for activities at the site over the previous five years, less the estimated groundwater usage at the existing ranch house at Lot 5. After approximately half of the residential lots are connected to OWD service, groundwater production would begin to increase from 10.65 acre-feet to a maximum of 22.2 acre-feet per year when development is completed, including the connection of OWD service and subsequent termination of groundwater production at the existing ranch house at Lot 5.

Peaceful Valley Ranch is located in a 4,300 acre watershed that includes approximately 835 parcels. Approximately 560 of these parcels have been developed. OWD reports that there are 533 meters within the watershed. Approximately 47 of the 835 parcels in the watershed are currently outside the OWD service area. Because approximately 95 percent of the parcels within the watershed receive OWD water, the watershed is not strongly dependent on groundwater for domestic water supply. Imported water not consumed is recharged to the water table via leach fields and percolation of excess irrigation. Groundwater recharge from rainfall is augmented by imported water by approximately 32 to 70 percent. An estimate of groundwater recharge for the watershed and an estimate of groundwater flow rate beneath Peaceful Valley Ranch indicate that 250 to 590 acre-feet of groundwater flow through the property on an annual basis.

Wastewater has a higher Total Dissolved Solids (TDS) concentration than potable water. The importance of groundwater recharge via septic discharge in the watershed is reflected by the elevated TDS concentration at the site. TDS concentrations at the site are typically greater than the drinking water standard of 1,000 milligram per liter, reflecting the use of septic leach fields throughout the watershed. As a result, groundwater quality in the area is not well suited for domestic water use.

Three significance thresholds to define significant impact to off-site domestic wells and groundwater dependent vegetation have been established. A 20-foot drawdown at off-site domestic supply wells induced by Peaceful Valley Ranch pumping and a 3-foot drawdown for vegetation that may potentially be dependent on groundwater have been established. A third threshold requires, per the County Groundwater Ordinance, that groundwater storage shall not be reduced by more than 50 percent. No significant impacts are anticipated with respect to the first and third groundwater related thresholds.

Under more conservative assumptions of site conditions, estimates of drawdown based on the results of the 53-hour constant discharge aquifer test indicate that Peaceful Valley Ranch pumping may induce approximately 3.3 feet of drawdown at the nearest groundwater dependent habitat. Thereby potentially exceeding the second significance threshold for groundwater.

The drawdown estimates do not account for the additional recharge that will be induced by the importation of OWD water. Because groundwater recharge induced by the importation of OWD water at the site occurs year round and is not subject to the variation that occurs with recharge from rainfall, the proposed pumping will not measurably reduce groundwater storage across the site, though localized drawdown around the production well is expected to occur.

A groundwater monitoring and mitigation plan has been developed to minimize the magnitude of drawdown for groundwater dependent habitat (Appendix A). As described in further detail in the plan, groundwater pumping at the pumping well, PV-4, shall be limited when the groundwater elevation at the proposed monitor well is three feet or less above the biologic groundwater threshold. This threshold elevation shall be established after the monitor well is installed. At that time groundwater elevation at the monitor well shall be compared to the groundwater elevation at well PV-4, where the lowest recorded groundwater elevation was made in late September 2004, a few weeks before the end of the most recent five-year drought. Based on the concurrent measurements of groundwater elevation at wells PV-4 and PV-6, the elevation of the biologic groundwater threshold shall be established. Groundwater pumping at the production well will stop when the groundwater elevation at the proposed monitor well reaches the groundwater threshold. Based on the expected location of well PV-6 and groundwater elevations measured up and down gradient of the expected well location, the biologic groundwater threshold will have an elevation of approximately 802 feet above mean sea level.

Groundwater production will be monitored using a cumulative flow meter. Groundwater level monitoring will be conducted at three wells, initially on a monthly basis. Monitoring frequency and mitigation measures may be adjusted at the Department of Planning and Land Use Director's discretion based on site specific monitoring data.

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- Appendix C Aquifer Test Data and Analysis and Well Logs
- Appendix D Laboratory Reports

## INTRODUCTION

This report provides an evaluation of groundwater resources and an assessment of impacts related to groundwater production to irrigate a proposed equestrian polo field consisting of 12.8 acres of turf. The polo field is part of the proposed 181-acre Peaceful Valley Ranch subdivision. Based on the findings of this resource evaluation, a groundwater monitoring and mitigation plan has been developed and is included as part of this report (Appendix A).

Peaceful Valley Ranch is in the unincorporated community of Jamul, east and adjacent of Highway 94, south of Olive Vista Road and north of Rancho Jamul Drive (Figure 1). The site is immediately north of the Rancho Jamul Ecological Reserve and Hollenbeck Wildlife Area, managed by the California Department of Fish and Game.

The Peaceful Valley Ranch project proposes the subdivision of 181.31-acres for an estate residential development, equestrian uses and amenities, and fire service facilities. The development plan includes a total of 57 lots consisting of:

- 46 – new estate residential lots ranging in size from a minimum of 2-acres up to approximately 6.2-acres (Lots 1-4, 6-47);
- 1 – estate residential lot of 4.0-acres for the existing Ranch House (Lot 5);
- 1 – 6.7-acre equestrian facility lot (Lot 48);
- 1 - 3.7-acre lot reserved for a new joint-use fire station and administrative offices of the Regional Fire Protection District and US Fish and Wildlife Service (Lot 49);
- 1 - 3.7-acre open space lot for the protection of biological resources (Lot 50);
- 1 - 28.9 acre private horse stable and training facilities / polo field lot (Lot 51); and,
- 6 - private roadway lots (Lots 52-57) (Figure 2).

The water supply for the proposed project will be imported water provided by the Otay Water District (OWD). Groundwater production from well PV-4 will provide a limited annual quantity of irrigation water for the 12.8-acre private equestrian polo field and facility at Lot 51. Groundwater production from the continued use of well PV-1 for domestic and irrigation uses at the existing residence, located at Lot 5 (Warren and Vivian Dedrick's life estate) (Figure 2), will continue until the Dedricks' elect to connect to OWD service. Alternatively, upon the Dedricks' passing, Lot 5 will be connected to OWD water service and groundwater production from well PV-1 will cease.

Peaceful Valley Ranch's long term groundwater management strategy is to limit groundwater use to the additional groundwater resource that will occur as a result of the importation of OWD water to the site and the subsequent percolation of septic effluent and irrigation water. In the short term, during the early stages of the project, Peaceful Valley Ranch will start groundwater production to support the equestrian polo field at the rate of groundwater usage calculated to have occurred at the site over the past five years. This recent annual rate of groundwater production is about half of long term annual rate that will occur once the project is fully developed. OWD general guidelines for water use in park-like settings indicate the 12.8-acre field may require 32 acre-feet of water per year. It is anticipated that OWD water will be used to supplement groundwater in order to meet the irrigation requirements of the polo field and equestrian center.

Because the maximum annual groundwater production that will partially support equestrian polo field irrigation is based on the number of OWD connections at the site, groundwater production for the equestrian polo field will not occur at the proposed annual volume until Lot 5 and the rest of the proposed lots are connected to OWD. Hence, net groundwater consumption at Peaceful Valley Ranch, with or without production from well PV-1 will be approximately the same.

## **TECHNICAL OBJECTIVE AND APPROACH**

The objective of this study is to evaluate available groundwater resources and project groundwater demand to assess the impact groundwater production will have on neighboring parcels that are dependent on groundwater.

The scope of this report was developed in consultation with Mr. Murray Wunderly, Groundwater Geologist for DPLU in an August 26, 2004 meeting and confirmed in subsequent correspondence (Appendix B). The meeting focused on three technical issues:

- The reliance on groundwater and OWD water within the watershed.
- The estimate of groundwater recharge induced by importing water to Peaceful Valley Ranch.
- The necessity to include an aquifer test in the groundwater study.

Subject to review of this report, DPLU concurred that the information presented in the August 26<sup>th</sup> meeting and provided herein, indicates that the great majority of parcels within the watershed have Otay Water District service available and that the watershed, for the most part, is not dependent on groundwater resources (DPLU, September 29, 2004) (Appendix B). Recharge of imported water via leach field percolation significantly augments the groundwater resources of the watershed. Based on this assessment, DPLU concurred that a detailed watershed analysis is not warranted (DPLU, September 29, 2004). Rather a hydrogeologic analysis focused on the immediate site and vicinity will provide a more accurate assessment of potential impacts related to groundwater production. DPLU concurred that the technical approach to assessing development-induced groundwater recharge was suitable to meet its requirements and the concept of limiting groundwater production to development-induced recharge was reasonable (DPLU, September 29, 2004). Based on the information presented in the August 26<sup>th</sup> meeting and the regulatory requirements and guidance of the California Environmental Quality Act (CEQA) and the County Groundwater Ordinance, DPLU requested an aquifer test be conducted at the site to provide additional information on the potential for water table drawdown beneath sensitive habitats, and at off-site wells.

Based on this direction from DPLU, a study methodology was implemented that included the following elements:

- An assessment of the watershed's reliance on groundwater and imported water to focus the specific objectives of the groundwater study.

- A groundwater recharge analysis that focuses on the magnitude of additional recharge induced by the use and discharge of imported water at the project site.
- Aquifer permeability characterization through on-site testing to support long-term drawdown estimates.
- Development of groundwater drawdown thresholds for neighboring off-site domestic water wells and a comparison of thresholds to estimated groundwater drawdown.

## **PHYSICAL SETTING**

The following provides a description of the topography, climate, and land use of the watershed surrounding the project site.

### **TOPOGRAPHY**

Peaceful Valley Ranch lies within a 4,300-acre watershed whose northern/upstream boundary occurs north of Skyline Truck Trail at an elevation of about 2,100 feet mean sea level (ft msl) (Figure 1). The watershed drains southwestward via a series of canyons that merge into ephemeral creeks upstream and downstream of Peaceful Valley Ranch. The eastern and western boundaries of the watershed are defined by secondary northeast-southwest trending ridges. The western ridge peaks at an elevation slightly greater than 1,500 ft msl. The eastern ridge is more prominent and peaks at an elevation of about 2,300 ft msl. The southern boundary of the watershed, for the purposes of this project, is defined by the confluence of the two ephemeral creeks that drain Peaceful Valley Ranch.

Peaceful Valley Ranch ranges in elevation from approximately 1,108 ft msl to 828 ft msl (Figure 2). Within Peaceful Valley Ranch there are two small drainage basins. The western basin is generally characterized as rolling hillside terrain with vertical relief between the peaks and valleys generally less than 50 feet. This portion of the property is drained by an ephemeral creek that parallels Highway 94. The eastern portion of the site is characterized by an elongated centrally located basin with an ascending hillside terrain to the east, west, and north. This broader and lower eastern basin is drained by a larger, southward trending, intermittent creek.

The southern boundary of the project site is approximately 1.3 miles north of the southern boundary of the watershed. From the northern boundary of the site to the southern boundary of the study area/watershed, the valley floor slopes southward at a grade of approximately 1.3 percent.

### **CLIMATE**

For the purposes of this study, climate is described in terms of annual rainfall and evapotranspiration within the watershed. The County of San Diego Draft Precipitation Map indicates that the watershed has an average annual rainfall of 15 to 18 inches over a 30 year period of record (DPLU and San Diego Geographic Information Source, 2004). Long term rainfall data for the Jamul area is best represented by the Dulzura Summit Rainfall Station (Figure 3) located about 9 miles

southeast of the site at an elevation of about 1,500 feet. The rainfall station records have monthly rainfall totals since 1969. Potential evapo-transpiration rates have been assessed by regional data provided by the California Irrigation Management Information System (CIMIS). CIMIS has created a state wide PET map comprised of 18 evaporative zones ([www.cimis.water.ca.gov/cimis/images/etomap.jpg](http://www.cimis.water.ca.gov/cimis/images/etomap.jpg)). The study area is in Zone 9, which has on average about 55 inches of PET per year (Table 1).

## LAND USE

Under the current general plan, most of the portion of the watershed north of Peaceful Valley Ranch is zoned for one and two acre lots. Most of the area south of Peaceful Valley Ranch is part of the Rancho Jamul Ecological Reserve and the Hollenbeck Canyon Wildlife Area. These areas encompass approximately 600 acres of the watershed defined herein and continue westward and southward beyond the limits of the watershed.

There are currently approximately 835 parcels within the watershed according to a SanGis data base search. A count of rooftops within the watershed on a recent aerial photo indicate approximately 560 structures exist within the watershed. Hence approximately 560 of 835 parcels have been developed. Otay Water District reports that there are 533 water meters within the watershed boundaries (Figure 4). This implies that approximately 95 percent of the developed parcels within the watershed receive water from Otay Water District.

Based on Otay Water District's service boundaries and limitations due to storage tank elevations, there are approximately 47 of the 835 parcels in the watershed that cannot receive imported water (Figure 5). Additionally, there may be other parcels that do not have water service because of the cost of delivering service to a relatively remote parcel or because the owner has elected not to obtain water service.

There are several parcels adjacent to Peaceful Valley Ranch that are within the Otay Water District but do not currently receive imported water service as the planned pipeline serving these parcels have not yet been constructed. Currently, owners of these parcels have formed a cooperative group for discussions with the Otay Water District and Peaceful Valley Ranch on feasible ways to implement the planned pipeline construction to serve these parcels. Assuming these discussions continue to a successful conclusion, only six parcels in the vicinity of Peaceful Valley Ranch will be dependent on groundwater for domestic water requirements (Figure 6). These six parcels, under four ownerships, are, like Peaceful Valley Ranch, within the OWD service area, but not within the San Diego County Water Authority (CWA) and the Metropolitan Water District (MWD) service areas. The four owners were invited to participate in the Peaceful Valley Ranch annexation into CWA and MWD and declined.

Potential future land use within the watershed includes seven properties that are in process with DPLU (Table 2). These properties are all within the OWD service area (Figure 6). Of the seven properties, six are expected to discharge waste water to septic leach fields. Site number 4, a telecommunication facility, is not expected to generate a significant volume of wastewater. The amount of wastewater generated for Site number 1, Jamul Indian Village is not known. The

remaining five properties are proposing a total of 102 residential parcels. The estimated waste water discharge for the five projects is 25.5 acre-feet per year assuming 0.25 acre-feet of waste water per dwelling unit. Since all seven projects are expected to have OWD service, groundwater use will be discretionary. The proposed development at the aforementioned five projects shall increase groundwater recharge in the watershed by approximately 19 to 25 acre-feet per year based on Professor David Huntley of San Diego State University's analyses of evaporative losses from leach fields (Huntley, 1987). Future development of the watershed is not expected to impact groundwater supply because nearly all of the watershed has OWD service available.

## HYDROGEOLOGIC CONDITIONS

The following describes general geologic conditions, well information, groundwater recharge, hydrogeologic units, groundwater occurrence, and limited groundwater quality information.

### GEOLOGY

The project site and the surrounding watershed include, from oldest to youngest, Mesozoic intrusive igneous, or plutonic rocks of the Peninsular Ranges Batholith, decomposed igneous rock (a.k.a. residuum) and Quaternary alluvium (California Division of Mines and Geology, 1962).

Alluvial deposits to depths of nearly 20 feet occur near the creek in the eastern basin of the site (Vinje and Middleton, 2003b). The alluvium is typically comprised of silty sand, fine to medium-grained or fine to coarse-grained, that is soft to loose near the surface and increases in density with depth. Residuum overlies the igneous bedrock and underlies alluvium where present. Residuum is comprised of silty sand and gravel, but is likely of greater density than the alluvium. The contact between residuum and igneous bedrock as encountered in observation wells OW-4 through OW-9 ranges from approximately 26 to 42 feet below ground surface (Appendix C). Consistent with these observations are the depths of two hand dug wells, PV-3 at the site and the Hendrix Well on the property northwest of the site. The depth of these hand dug wells suggest the contact between residuum and the underlying bedrock occurs at a depth of approximately 28 feet.

There are numerous drainages in the Jamul area, including those beyond the limits of the immediate watershed, that trend in a northeast-southwest direction. This drainage pattern may represent underlying geologic structures such as fracture zones or pluton contacts where rock is more susceptible to weathering and erosion. In fact, within the eastern drainage basin near the proposed equestrian polo field exposures of diorite or gabbro are evident. These dark-colored intrusive igneous rocks are magnesium rich (mafic) and are also enriched with calcium feldspar; a mineral that crystalized at high temperatures and pressures relative to the environment it is currently exposed to. The surrounding hillside exposures reveal granodiorite. These lighter colored rocks are iron rich (felsic) and are also enriched with potassium and sodium feldspar; a mineral that crystalized at relatively low temperatures and pressures compared to calcium feldspar. Though both rock types crystalized from magma at depth, granodiorite is frequently more resistant to chemical weathering compared to the mafic rocks because its suite of minerals formed at temperature and pressure conditions closer to what the rocks are now exposed to. Through preferential erosion where the crystalline rock is more weathered, drainages have become aligned, over geologic time, with the

regional structure. Groundwater storage and flow rates within the underlying bedrock are likely to be greater in these areas due to higher secondary porosity and higher permeability in the fractured zone.

## **WATER WELL INFORMATION**

The following provides:

- Construction and water level information on wells and borings at, and in the vicinity of Peaceful Valley Ranch that were used to characterize groundwater conditions;
- Historic groundwater production estimates for several activities at the site;
- Aquifer testing information.

### **Well and Boring Information**

There are numerous wells at Peaceful Valley Ranch as described in the following paragraphs. Wells not to be used for groundwater production or groundwater level observation will be destroyed (Appendix A, Table A-2). Well PV-1 may be used to support the current long-time residents at Lot 5.

Four production wells, (PV-1, PV-2, PV-3, and PV-4) currently exist at Peaceful Valley Ranch (Table 3, Figure 2). Installation dates are not known but all four wells are weathered and are probably more than twenty years old. Well PV-1 is currently controlled by the prior owner and continuing resident of the existing ranch house at Lot 5 under a Life Estate agreement. That well is currently used for both domestic potable and irrigation uses at the existing ranch house. Well PV-2 is not active, but is a proposed groundwater level monitoring well. Well PV-3 is not active, and is proposed to be destroyed. Well PV-4 is the existing well proposed for continuing groundwater production. In addition to the foregoing, a fifth production well (PV-5 located on proposed Lot ...) also exists on the property, but is under the separate ownership and operation of a non-related, off-site single-family residence adjacent to the property. The well and waterline to this off-site residence, are within an existing easement to the benefit of that off-site property. The alignment of that existing waterline and easement will be relocated as shown on the project tentative map.

Nine observation wells, OW-1 through OW-9, have been installed to depths ranging from 26 feet to 83 feet (Table 3, Figure 2). Observation wells OW-1, 7, 8 and 9 actually encounter groundwater. The remaining observation wells are completed above the water table but provide control on the maximum water table elevation. Septic exploration borings C, D, E, and J encounter the regional water table, at least seasonally, and are used to evaluate groundwater elevation.

Two additional off property wells referred to as the Hendrix Hand Dug well and the Parker Well also provide groundwater level information. Neither well is active. Wells and borings used to monitor groundwater levels have been surveyed by a licensed professional surveyor.

### On-Site Groundwater Production

Within the Peaceful Valley Ranch property, groundwater has historically been utilized for several purposes. These have included: (1) irrigation of a 3.0-acre organic farm; (2) domestic and irrigation use at the organic farmer's residence; (3) domestic and irrigation use at the existing ranch house; (4) domestic and irrigation use at a small caretakers residence on-site; (5) a relatively minor use for equine boarding and breeding; (6) domestic and irrigation use at an adjacent residence "out-parcel"; and (7) reported, but currently undocumented, on site groundwater production for irrigation of approximately 40 acres of cucumbers grown on the property immediately south of Peaceful Valley Ranch during the 1980's and 1990's.

The level of historic production related to these uses has been estimated as follows:

1) Well PV-4 - Organic Farm / Farmer's Residence / Caretaker's Residence / Equine Use: This well has historically supplied all of the irrigation water for a 3-acre organic farm, the farmer's residence, a small caretaker's residence and miscellaneous equine boarding uses. There are no written records of historic groundwater production of this well. However, estimates have been derived for the various historical uses supplied by this well as follows:

Organic Farm: The organic farm operated at the property for approximately five years. The operator of the organic farm voluntarily terminated its lease and abandoned the organic farm operation in August 2004. Based on reference evaporation rates for the area of 55-inches per year as identified by the California Irrigation Management Information System (CIMIS) (refer to <http://www.cimis.water.ca.gov/cimis/info.jsp>), annual rainfall of 16.5-inches per year (15-18 inches per year range per the Final Draft San Diego County Precipitation Mapping, 2004, Department of Planning and Land Use), an average crop coefficient of 0.8 and as assumed irrigation efficiency of 75 percent, the annual groundwater production and use for the organic farm has been calculated to be approximately 10.3 acre-feet per year.

$$\text{Demand} = \frac{((55'' - 16.5'') \times 1\text{-foot}) \times 3 \text{ acres} \times 0.8}{12'' \times 0.75} = \frac{10.3 \text{ acre-feet}}{\text{year}}$$

1) Farmer's Residence and Caretaker's Residence: Based on County standards for water use, the small farmer's residence and caretaker's residence have been estimated to each use approximately 300 gallons per day of groundwater for domestic and irrigation use. Thus the combined residential use has been calculated to be approximately 0.3 acre-feet per year.

Equine Use: The amount of groundwater used for the historic care and breeding of horses is relatively insignificant and has been estimated to average approximately 0.05 acre-feet per year.

Thus, total historic production and use of groundwater from 2000 to 2004 at Well PV-4 is approximately 10.65 acre-feet per year.

2) Well PV-1 - Existing Ranch House: This well supplies all of the domestic and irrigation water for the existing ranch house and the irrigated landscaping immediately surrounding the house. There

are no records of the groundwater production of this well. However, based on typical average household water use assumptions of 350-gallons per day for similar properties, the average annual production and use for the ranch house has been calculated to be approximately 0.35 acre-feet per year.

3) Stoddard Well - Out-Parcel Residence: Inasmuch as this well is anticipated to continue in use and serves an out-parcel not part of the Peaceful Valley Ranch development, production from this well has not been included in this analysis.

Thus, the estimated total historic groundwater use related to the Peaceful Valley Ranch property has been calculated to be approximately 11 acre-feet per year.

### **Aquifer Testing**

Several aquifer tests have been conducted at Peaceful Valley Ranch to characterize well yield, estimate hydraulic conductivity and transmissivity (a.k.a. permeability), and to assess groundwater level drawdown in response to pumping. One 53-hour constant discharge test, three eight-hour step drawdown tests, and six slug-withdrawal tests have been conducted at the site (Appendix C).

### **Constant Discharge Test**

The 53-hour constant discharge test was conducted from February 15, 2005 to February 17, 2005 and groundwater level recovery was monitored from February 17<sup>th</sup> to February 21<sup>st</sup>. Pumping was conducted at well PV-4, the proposed irrigation well for the equestrian polo field at a rate of 42 gallons per minute (gpm). Groundwater levels were monitored at 13 wells and borings located on and off the property. The test was conducted in accordance with the methods described in the aquifer test work plan submitted to and approved by DPLU (W&A, November 2004). During the pumping portion of the test 0.02-inches of rainfall occurred according to the Thousand Trails rainfall station. During the recovery phase of the test 1.77 inches of rainfall occurred. However, sufficient recovery had occurred to calculate the transmissivity of the aquifer long before the automated monitoring of water level recovery was terminated. During the recovery period used to calculate transmissivity, 0.16 inches of rainfall had occurred. However, the groundwater level response to rainfall was evident, and a good data set was available prior to the influence of the rainfall recharge to calculate transmissivity at PV-4 (Appendix C). A transmissivity value of 2.0 feet<sup>2</sup> per minute (ft<sup>2</sup>/min) was calculated at PV-4 using the Theis Recovery Method.

Water level measurements indicate that groundwater drawdown was not observed at the 13 observation wells (Appendix C). This is probably attributable to several factors:

- The calculated transmissivity is relatively high, accordingly drawdown in surrounding wells is expected to be low and therefore easily masked by other processes occurring in the field.
- It is common in fractured rock conditions not to observe drawdown in neighboring observation wells during aquifer tests because fracture systems are often not fully connected.

- Groundwater underlying the intermittent creek has been sufficiently elevated this winter to sustain surface water flow. This condition may have masked the limited extent of drawdown that would otherwise be expected to occur at wells near the intermittent creek.
- Groundwater level fluctuations, up and down, on the order of a few tenths of feet in response to rainfall may have masked the observation of drawdown.

### **Step Drawdown Tests**

Earth Tech, Inc. conducted step drawdown tests at wells PV-1 and PV-2 in 2003 to assess well yield. Based on the aquifer test information, Earth Tech, Inc. estimated that wells PV-1 and PV-2 had long term pumping rates of 2 gpm and 50 gpm, respectively (Earth Tech, 2003). W&A applied the Eden-Hazel Method to Earth Tech's step drawdown data for well PV-2 to estimate a transmissivity value of 0.2 ft<sup>2</sup>/min (Appendix C). The step test for PV-1 was cut short because of low well yield. W&A applied a Theis analysis to the pumping drawdown data to estimate a transmissivity of 0.002 ft<sup>2</sup>/min. Transmissivity and hydraulic conductivity calculations based on pumping drawdown data compared to recovery data are typically less accurate due to well frictional losses that occur from pumping. However, the transmissivity value is useful in that it confirms Earth Tech's observation that the well has a relatively low yield.

A step drawdown test was conducted at PV-4 in October 2004 by W&A to assess well yield and to determine a pumping rate for the constant discharge test requested by DPLU. The step drawdown data indicated that well PV-4 had a long term pumping rate of approximately 45 gpm. A transmissivity of 1.0 ft<sup>2</sup>/min was calculated from the step drawdown data using the Eden-Hazel method. One reason this transmissivity value is lower than the value calculated during the constant discharge test is that groundwater levels rose 12 feet since the step drawdown test was conducted. Accordingly, the 136.5-foot well was drawing on 121.5 feet of saturated rock during the constant discharge test and 109.5 feet of rock during the step drawdown test. The difference in aquifer thickness, for an unconfined aquifer condition, accounts for about 10 percent of the difference in the two test results. The constant discharge test was run longer and at a higher average rate than the step drawdown test and therefore induced more hydraulic stress on the aquifer compared to the step drawdown test. Hence, the difference between the two transmissivity values measured at PV-4, other than that attributed to the change in aquifer thickness, is attributed to the better testing method afforded by the constant discharge test.

### **Slug Withdrawal Tests**

Slug withdrawal tests were conducted at observation wells OW-1, OW-7, and OW-9 and septic exploration borings C, D, and J (Figure 2, Appendix C). Slug withdrawal tests were conducted by measuring groundwater level changes with a pressure transducer and inducing a decline in water level by either placing and removing a dummy-probe below the water surface in each well; or by pumping the well for 60 to 90 seconds and rapidly removing the pump.

Slug test data were analyzed using the Bouwer-Rice method. Hydraulic conductivity values ranged from  $7.7 \times 10^{-5}$  to  $1.7 \times 10^{-2}$  ft/min (Table 4). Hydraulic conductivity values are consistent with the

hydrogeologic unit the wells and borings are completed in as discussed in further detail in the section that describes the properties of the hydrogeologic units that are on the site.

## GROUNDWATER RECHARGE

Groundwater flowing through Peaceful Valley Ranch has been sustained by the infiltration of precipitation, infiltration of surface water along ephemeral and intermittent creek beds, and percolation of imported water in the form of septic leachate and excess irrigation. Past agricultural and domestic groundwater use at the site, as described in this report, has been reliant on these resources for over 20 years.

### Regional Groundwater Recharge

Groundwater recharge from rainfall was estimated at 0.11 feet per year in the Lee Valley watershed of Jamul in 1988 by the United States Geological Survey. During this year approximately 19.5 inches of precipitation fell in the watershed and approximately 7 percent reached the water table (*USGS, Open File Report 90-592*, 1991). The percentage of rainfall that reaches the water table will vary depending upon the amount and intensity of rainfall and the amount of available groundwater storage. Average annual rainfall in Jamul ranges between 15 and 18 inches (San Diego County Precipitation Map, 2004). Assuming 7 percent of the low end of the rainfall range of 15 inches yields 0.088 feet of annual rainfall recharge to the water table. Applied across the 4,300 acre watershed results in approximately 375 acre-feet of groundwater recharge occurs per year on average (Table 5). Since the aquifer underlying the watershed is comprised primarily of fractured igneous rock, groundwater storage capacity can sometimes be less than the amount of water available to recharge the aquifer. This condition may occur in high rainfall years or when high rainfall years occur sequentially. Water balance calculations conducted at other fractured rock sites in San Diego County suggest that this condition can reduce average recharge rates by about 50 percent. Hence, average annual groundwater recharge from rainfall for the watershed is conservatively estimated to range between 190 and 375 acre-feet per year (Table 5).

Groundwater recharge within the watershed is significantly augmented by Otay Water District's water service through infiltration of septic leachate to the water table. Census information from 2000 indicates that an average of 3.5 people reside in each dwelling unit within the census tracts that include the watershed. Assuming water conservation fixtures are in place, the California Department of Water Resources estimates that domestic water consumption averages approximately 70 gallons per day per person. Assuming that 90 percent of this water is disposed through septic leach fields, approximately 0.25 acre-feet of water per year is recharged to the water. Professor Huntley of San Diego State University (Huntley, 1987) conducted a groundwater modeling analysis as part of his report to the San Diego Regional Water Quality Control Board (RWQCB) entitled "*Technical Report of Subsurface Wastewater Disposal, San Diego Regional Water Quality Control Board*". The analysis indicates that under soil conditions conducive for successful leach fields, 90 percent to 99 percent of leachate reaches the water table. This estimate of recharge does not include additional contribution from irrigation.

Recharge attributable to imported water is estimated to occur at 533 metered locations within the watershed at a rate of 0.20 to 0.25 acre-feet per year per meter. Therefore, recharge from Otay Water District water service within the watershed is estimated at 120 to 132 acre-feet per year depending upon evaporative losses of septic leachate. The combined recharge from rainfall and septic leachate results in annual recharge to the watershed that ranges from approximately 320 to 510 acre-feet. Hence, groundwater recharge from precipitation is augmented by 32 to 70 percent by recharge from water delivered by Otay Water District. This augmentation does not include the additional recharge from infiltration of irrigation water. Further, recharge from Otay Water District water occurs consistently, independent of rainfall fluctuations. Finally, groundwater pumping from these 533 metered locations, either does not occur at all, or is discretionary. As a result, not only is groundwater recharge greater, but groundwater demand in this watershed is lower and less critical than in a comparable watershed that is largely dependent on the groundwater resource.

This analysis indicates that the great majority of parcels within the watershed have Otay Water District service available and that the watershed, for the most part, is not dependent on groundwater resources for domestic supply. Recharge of imported water via leach field percolation significantly augments the groundwater resources of the watershed.

### **Project-Induced Recharge**

An increase in groundwater recharge is expected to occur as a result of project development and the delivery of imported water. Estimates of groundwater recharge have been developed for the following recharge processes: infiltration from septic leach fields, irrigation of individual residential parcels, and irrigation of the 12.8-acre equestrian field. Recharge is also expected to occur from irrigation of home owner association common areas and other equestrian center landscaped areas.

Water demand estimates for the project provided to OWD indicate that approximately 153 acre-feet of water per year will be required (Table 6). This includes 32 acre-feet per year to irrigate the equestrian polo field. Approximately 13 acre-feet are anticipated to meet domestic water demand and the balance is anticipated to be used for irrigation at residences, the fire station and the public and private equestrian facilities. Evaporation losses from leachate percolation are expected to be minimal based on Professor Huntley's report to the RWQCB on septic systems and groundwater (Huntley, 1987). Vinje and Middleton report approximately 95 percent of the percolation test results ranged between 8 minutes per inch (mpi) and 60 mpi (Vinje and Middleton, 2003a). Under these conditions, Huntley's modeling work suggests that approximately 95 percent of septic effluent would reach the water table; resulting in recharge of approximately 10.4 acre-feet per year (Table 6).

Infiltration of irrigation water beyond the zone of evaporation was estimated at 10 percent of the total estimated irrigation water demand; resulting in approximately 11.8 acre-feet per year (Table 6). For the equestrian polo field, irrigation water from OWD and no irrigation water from groundwater, was accounted for in calculating development induced groundwater recharge. Hence, development induced groundwater recharge from irrigation and septic field infiltration, accounting for internal downward rounding of both terms, is anticipated to create an additional 22.2 acre-feet of recharge.

Even though additional groundwater resources are available from rainfall and septic recharge from up gradient areas, the project shall restrict groundwater production for the purpose of irrigating the equestrian polo field to the estimated 22.2 acre-feet per year of groundwater recharge induced by the development. This approach, including preliminary recharge calculations, was reviewed and approved in concept by Mr. Wunderly (W&A, September 19, 2004; DPLU, September 29, 2004) (Appendix B).

### **Overview of Regional Recharge and Project Induced Recharge**

Existing groundwater recharge in the watershed from rainfall and septic infiltration is estimated to range from approximately 320 to 510 acre-feet per year. Project induced groundwater recharge is estimated to produce an additional 22.2 acre-feet of recharge per year. Groundwater production at the site will be restricted to 22.2 acre-feet per year to partially supply the estimated 32 acre-feet per year of irrigation demand of the equestrian polo field.

### **HYDROGEOLOGIC UNITS**

The following hydrogeologic units have been identified at the site: slightly-fractured igneous rock, moderately-fractured igneous rock, residuum, and alluvium (Figure 7). The slightly-fractured igneous rock unit, refers to igneous rock that comprises the topographic highlands and occurs at some undefined depth below the valley floor. This unit underlies the entire 4,300 acre watershed. Well yields are often limited to a few gallons a minute in this unit and this unit's capability of transmitting and storing water is relatively low. Though no production wells are located in the topographic highlands at the site, well PV-1 is at the base of the highlands. PV-1 has a low yield and based on the transmissivity derived from Earth Tech, Inc.'s aquifer test, it likely encounters slightly fractured bedrock. PV-1 will not be used to support the equestrian polo field.

The moderately-fractured igneous rock unit, occurs within the topographic lowlands. Wells PV-2 and PV-4 are located in this area and experience good groundwater production. The best aquifer test applied to this hydrogeologic unit provided a transmissivity value of 2.0 ft<sup>2</sup>/min (Table 4). Dividing the transmissivity by the aquifer thickness of 121 feet, yields an average hydraulic conductivity of  $2 \times 10^{-2}$  ft/min. This is consistent with mid-range values of hydraulic conductivity for fractured igneous rock and a middle range value for clean sand (Freeze and Cherry, 1979).

Residuum is typically low yielding, but can provide relatively high groundwater storage capacity. A hydraulic conductivity of  $9 \times 10^{-4}$  feet per minute (ft/min) was calculated from slug test data collected from observation well OW-7 located in the topographic lowlands of the site, overlying moderately fractured igneous rock (Table 4). This well penetrates only a few feet of the fractured rock aquifer. This value is consistent with mid-range values of hydraulic conductivity for a silty sand (Freeze and Cherry, 1979). At observation well OW-1, located in the topographic highlands of the site and overlying slightly fractured igneous rock, a hydraulic conductivity of  $8 \times 10^{-5}$  feet per minute in residuum was calculated (Table 4). This value is consistent with the lower end of the range of hydraulic conductivity for a silty sand.

Under drought conditions alluvial sediments at the site probably occur mostly above the water table. Under high groundwater conditions, alluvium will yield and store groundwater. Hydraulic conductivity of alluvial sediments were measured from slug injection test data at septic exploration borings C, D, and J. Hydraulic conductivity values ranged from  $6 \times 10^{-3}$  feet per minute at Boring J to  $2 \times 10^{-2}$  feet per minute at borings C and D (Table 4). These values are consistent with the upper range of silty sand and represent a mid-range value for clean sand (Freeze and Cherry).

## **GROUNDWATER OCCURRENCE**

This discussion addresses changes in groundwater levels over time, groundwater flow direction and water table gradient, and estimates the rate of groundwater flow from the site.

### **Groundwater Level Fluctuations**

Depth to groundwater has been measured at the site for approximately one year. Water level measurements were taken in February, June, and November 2004 as well as in January and February 2005. Depths have been converted to groundwater elevations based on surveyed elevations of measuring point elevations. Groundwater level hydrographs for selected on-site wells have been prepared for this data set (Figure 8). Additionally, groundwater levels from four selected non-pumping wells in DPLU's groundwater data base have been evaluated to assess the historic range in groundwater levels. These wells are located within Jamul, outside of the Peaceful Valley Ranch watershed (Figure 9). Groundwater depth measurements were generally taken three months apart. The period of record for the DPLU data is 10 to 23 years (Figure 10). Site specific hydrographs and Jamul area hydrographs (Figures 8 and 10) are plotted at the same time scale to facilitate comparison of water level fluctuations over time.

Groundwater levels at the site decreased a few feet during the summer of 2004. The decline is likely part of overall trend following the summer of 1998, the previous high rainfall year in the area. Since the 2004-2005 winter began, water levels have increased approximately 10 to 16 feet from June 21, 2004 through February 21, 2005 (Figure 10).

According to DPLU's information, static groundwater levels in the Jamul area were at historic lows in the summer of 2004 (Figures 9 and 10). DPLU measurements indicate water levels have risen rapidly in a manner similar to that observed at the site. As of January 18, 2005, groundwater levels measured by DPLU are approximately 2 to 7 feet from historically measured highs. Peak groundwater levels occurred in the winter of 1993 for two of the wells. One other well was not part of the data base in 1993 and one additional well was not measured during the winter of 1993. The range in measured groundwater levels over the period monitored is approximately 10 to 16 feet. Hence the fluctuations observed at the site over the past year are comparable to fluctuations observed in the Jamul area since the early 1980s.

### **Groundwater Flow Direction and Gradient**

Groundwater elevation data obtained on January 27, 2005 have been contoured in plan view (Figure 11). Groundwater elevation data were contoured using a linear interpolation algorithm using the contouring program, Surfer 7.0 (Golden Software, 1999) and manually adjusted to account for groundwater elevation constraints provided by dry wells, as well as adjustments reflecting topography. Groundwater elevation contours indicate a general northerly to southerly direction of flow consistent with the general topographic grade. Hydraulic gradients vary across the site with steep gradients, 0.08, underlying topographic highs and slightly fractured igneous bedrock, while lesser gradients, 0.016, occur along the main drainage along the eastern portion of the property where moderately fractured bedrock and permeable alluvium occur.

Comparing groundwater elevations at adjacent wells that are completed at different depths such as PV-1 and PV-3, or PV-2 and Boring J, provides information on the vertical component of flow. Groundwater elevations were similar for the adjacent wells (Table 3). This indicates that there is not an important component of downward or upward flow and groundwater flow through the site is essentially horizontal. Well PV-2 is located in the main creek bed and is set in a concrete block to protect it from surface water flow. The casing stands several feet above the bottom of the creek. During the winter of 2004-2005, the water level in PV-2 was higher than the creek bottom indicating the groundwater is discharging into the creek during this time period and temporarily sustaining surface water flow. From February 2004 to November 2004, groundwater levels at PV-2 were well below the bottom of the creek and no surface water flow was occurring in the creek.

### **Groundwater Flow From Site**

The rate of groundwater flow into the project site can be estimated using a cross section analysis (Figure 7) that relies on the transmissivity of the rock, the groundwater gradient, and the width of moderately fractured igneous rock at the down gradient end of the project site as measured perpendicular to the groundwater flow direction (Equation 1).

Transmissivity is the product of the aquifer thickness and the hydraulic conductivity of the aquifer. Recognizing that transmissivity values can vary slightly over time as groundwater levels fluctuate and the hydraulic conductivity can vary spatially even within the moderately fractured rock zone, a range of flow calculations have been prepared to reflect this uncertainty. Accordingly, groundwater flow rate calculations have been prepared based on the transmissivity measured from the February 2005 aquifer test, 2 feet<sup>2</sup> per minute, when groundwater levels were approaching, but not yet at, peak levels for that season. Additionally groundwater flow rate calculations have been prepared that reflect the groundwater level measured at PV-4 in late September 2004 at the end of the drought and account for the spatial variation in hydraulic conductivity by using a lower transmissivity in the calculation.

The depth to groundwater at well PV-4 rose from approximately 29 feet below TOC to approximately 15 feet below TOC between late September 2004 and the aquifer test in mid-February 2005. Though the depth of the fractured rock aquifer has not been explored, it is likely several hundred feet deeper than the total depth of PV-4, 136 feet. The bottom of the aquifer is very

conservatively assumed to be 136 feet. Accordingly, aquifer thickness is estimated at approximately 107 feet at the end of the drought and approximately 121 feet at the time of the aquifer test. Therefore aquifer thickness increased by 13 percent between the end of the drought and the time of the aquifer test. Because the aquifer thickness is most likely much greater than this, the effect drought has on the variation of transmissivity is most likely being over estimated in this analysis. Assuming that under drought conditions, aquifer thickness is 15 percent less than at the time of the test, the transmissivity at well PV-4 would be reduced from 2 feet<sup>2</sup> per minute to 1.7 feet<sup>2</sup> per minute. Additionally, recognizing that hydraulic conductivity varies spatially within the moderately fractured zone and may be less (it may also be more) than that measured at well PV-4, transmissivity is reduced again by 50 percent, or 0.85 feet<sup>2</sup> per minute, to support a conservatively low estimate of groundwater flow.

The groundwater flow rate through the moderately fractured rock zone at the site along the southern boundary of the property can be calculated from Equation 1.

$$Q = T * W * i \quad (1)$$

Where:

- Q = flow rate, cubic feet per minute (ft<sup>3</sup>/min)  
T = transmissivity, square feet per minute (ft<sup>2</sup>/min)  
W = estimated width of moderately fractured igneous rock from the intermittent stream to the eastern property boundary, ft  
i = hydraulic gradient; the vertical drop in the water table elevation divided by the horizontal distance the drop occurred in, dimensionless.

Under wet season conditions groundwater flow occurs in the alluvium and the moderately fractured bedrock results in two transmissivity values and two corresponding widths. Based on the surface casing depth of 25 feet at PV-4, the depth of alluvium is approximately 25 feet. Since depth to water at PV-4 in February was approximately 15 feet, the saturated thickness of alluvium is approximately 10 feet.

$$T_1 = 2.0 \text{ ft}^2/\text{min}$$

$$T_2 = 10 \text{ ft deep} \times (6 \times 10^{-3} \text{ ft}/\text{min} + 2 \times 10^{-2} \text{ ft}/\text{min})/2 = 1.3 \times 10^{-1} \text{ ft}^2/\text{min}$$

$$W_1 = 1,500 \text{ ft}$$

$$W_2 = 375 \text{ ft}$$

$$i = 0.016$$

Solving for Q;

$$Q = [(2.0 \text{ ft}^2/\text{min} * 1,500 \text{ ft}) + (0.13 \text{ ft}^2/\text{min} * 375 \text{ ft})] * 0.016$$

$$Q = [3,000 \text{ ft}^3/\text{min} + 49 \text{ ft}^3/\text{min}] * 0.016$$

$$Q = 49 \text{ ft}^3/\text{min}$$

Converting from cubic feet per minute to acre-feet per year;

$$Q = \frac{49 \text{ ft}^3/\text{min} * 1,440 \text{ minutes} * 365 \text{ days} * 1 \text{ acre}}{\text{day} \quad \text{year} \quad 43,560 \text{ ft}^3}$$

$$Q = 590 \text{ acre-feet per year}$$

For the conservative assessment of groundwater flow where drought conditions prevail and hydraulic conductivity is assumed to be 50 percent lower than that measured during the aquifer test, the water table will be below the alluvium along the southern boundary of the site. Therefore groundwater flow is not occurring in this hydrogeologic unit under these assumptions at Peaceful Valley Ranch.

$$T_1 = 0.85 \text{ ft}^2/\text{min}$$

$$T_2 = 0 \text{ ft deep} \times (6 \times 10^{-3} + 2 \times 10^{-2} \text{ ft}/\text{min})/2 = 0 \text{ ft}^2/\text{min}$$

$$W_1 = 1,500 \text{ ft}$$

$$W_2 = 0 \text{ ft}$$

$$i = 0.016$$

Solving for Q;

$$Q = [(0.85 \text{ ft}^2/\text{min} * 1,500 \text{ ft}) + (0.0 \text{ ft}^2/\text{min} * 0 \text{ ft})] * 0.016$$

$$Q = [2,250 \text{ ft}^3/\text{min} + 0 \text{ ft}^3/\text{min}] * 0.016$$

$$Q = 20.4 \text{ ft}^3/\text{min}$$

Converting from cubic feet per minute to acre-feet per year;

$$Q = \frac{20.4 \text{ ft}^3/\text{min} * 1,440 \text{ minutes} * 365 \text{ days} * 1 \text{ acre}}{\text{day} \quad \text{year} \quad 43,560 \text{ ft}^3}$$

$$Q = 250 \text{ acre-feet per year}$$

Estimated groundwater flow out of Peaceful Valley Ranch ranges from approximately 590 acre-feet to 250 acre-feet per year depending upon seasonal conditions and conservative estimates regarding the spatial variation in hydraulic conductivity. These flow rate estimates do not include groundwater flow beyond a depth of 136 feet, the depth of well PV-4. Nor does it include groundwater flow in the slightly fractured igneous rock.

## GROUNDWATER QUALITY

Groundwater quality has been assessed at the site with respect to nitrate and total dissolved solids (TDS). Groundwater samples have been collected at several wells and borings including wells PV-1 through PV-4, observation well OW-7, and septic exploration boring J (Table 7, Appendix D).

While conducting step drawdown tests in September and October 2003, Earth Tech collected groundwater samples at the test wells. Groundwater samples were collected in June 2004 and January 2005 by W&A at several wells and borings. A detailed assessment of this work through the June 2004 sampling round was presented to the San Diego County Department of Environmental Health in October 2004 and updated in October 2005 (W&A, 2005).

Nitrate concentrations, reported in the form of Nitrogen, ranged from below the laboratory detection limit of 0.05 milligrams per liter (mg/l) at well PV-2 in January 2005 to 13.2 mg/l at the large diameter hand dug well PV-3 in June 2004 (Table 7). This peak concentration may be attributable to the decomposition of organic debris that may have accumulated in the large diameter well. Overall, nitrate concentration in groundwater samples collected at wells at the up gradient end of the site are lower than groundwater samples collected from wells at the center and down gradient portions of the site. At the center and down gradient locations, nitrate concentrations from samples collected in June 2004 typically approached or exceeded the Maximum Contaminant Level (MCL) of 10 mg/l (W&A, 2005). This is most probably attributable to the former operations of the organic farm located at the site (W&A, 2005). The 3-acre organic farm operated for five years in the area designated for the polo equestrian field. The farm reportedly used a high potency kelp-based fertilizer in its operations. The organic farm voluntarily terminated its operations in August 2004.

Nitrate concentrations in groundwater samples collected at wells PV-1, PV-2, PV-3 and PV-4 in January and February 2005 declined compared to concentrations in groundwater samples collected in June 2004 (Table 7). Since January samples were collected during a major groundwater recharge season as reflected by an increase in groundwater levels of greater than 10 feet, dilution of nitrate in groundwater is consistent with this process. Nitrate concentrations in samples collected in January exceeded the MCL at wells PV-4 and OW-7.

Well PV-1 provides water to the Dedrick's home, the existing ranch house on Lot 5. Groundwater samples collected from well PV-1 exceeded the MCL for nitrate and TDS on two occasions, once in the fall of 2003 and once in the summer of 2004. In January of 2005, the groundwater sample collected from well PV-1 had nitrate and TDS concentrations below their respective MCLs. Per the life estate agreement the Dedrick's have with Peaceful Valley Ranch, LLC, the Dedrick's have the right to continued use of well PV-1 or may elect to connect to OWD water service. Peaceful Valley Ranch, LLC has notified the Dedrick's that nitrate and TDS concentrations in groundwater samples collected from well PV-1 have exceeded MCLs.

Nitrate and TDS concentrations in excess of their respective MCLs are the result of land use activities that are independent of the proposed project. Nitrate concentrations should decline over time as the mass of nitrate in soil is consumed by plants and diluted by rainfall recharge. The rate of decline will be depend on how much nitrate remains in the soil and how much rainfall recharge will occur in the future. It is expected that nitrate concentrations from the infiltration of septic leachate to the water table will result in nitrate concentrations below the MCL once the effects of the organic farm dissipate (Wiedlin & Associates, 2006a).

TDS concentrations at the site range from 546 mg/l at well OW-7 in January 2005 to 1,520 mg/l at boring J in June 2004. The State of California has two secondary drinking water standards for TDS

of 500 mg/l and 1,000 mg/l. Most groundwater samples collected at the site approach or exceed the less stringent drinking water standard of 1,000 mg/l. TDS concentrations do not vary much spatially across the site indicating there are no point sources of salts at the site. The low TDS concentrations observed in some samples collected in January are attributable to rainfall recharge. Elevated TDS concentrations at the site are most likely attributable to groundwater recharge from the hundreds of septic leach fields in the watershed. Because of this ongoing source of recharge and water degradation, it is likely that the improved TDS concentrations at wells OW-7, PV-2, and PV-3 are temporary.

Groundwater samples collected at PV-4 during the 53-hour constant discharge test indicate a consistent nitrate concentration of approximately 10 to 11 mg/l and a consistent TDS concentration of approximately 1,060 mg/l. Both constituents are above their respective drinking water standards.

In summary, nitrate concentrations in groundwater have approached or exceeded drinking water standards at locations adjacent or down gradient of the former organic farm operation at the site. Groundwater samples collected in January 2005 during a period of significant groundwater recharge from rainfall indicate that nitrate concentrations have declined. TDS concentrations in groundwater samples collected at the site typically exceed drinking water standards. A decline in TDS concentrations observed in some groundwater samples collected in January 2005 is likely a temporary condition because the primary source of dissolved minerals are the several hundred septic leach fields located within the watershed.

### **THRESHOLDS FOR GROUNDWATER DRAWDOWN**

Three significance thresholds to define significant impact to off-site domestic wells and to on-site and off-site groundwater dependent vegetation have been established. The first two thresholds are from DPLU's CEQA guideline for establishing significance related to the potential impacts of groundwater drawdown to domestic water supply wells and to groundwater dependent vegetation. The third guideline is derived from County Standards for Site Specific Hydrogeologic Investigations; a supplement to the County of San Diego's Groundwater Ordinance.

- Twenty feet of drawdown, induced by groundwater pumping at Peaceful Valley Ranch, to minimize the reduction of well yield at off-property domestic supply wells.
- Three feet of water table drawdown, induced by groundwater pumping at Peaceful Valley Ranch, to help protect the vitality of groundwater dependent vegetation.
- Groundwater storage reduction shall not exceed 50 percent of the maximum aquifer storage capacity.

There are six residential parcels in the immediate vicinity of the Peaceful Valley Ranch that will be dependent on groundwater for domestic potable use (Figure 6). Five parcels share the northern boundary of Peaceful Valley Ranch and the sixth parcel is somewhat further north of the northern

boundary of Peaceful Valley Ranch. Proposed production well PV-4 is approximately 1,600 feet from the southeast corner of the nearest groundwater dependent property.

The proposed production well for the project, PV-4, is located on the southern boundary of the site. The nearest occurrence of potentially groundwater dependent habitat is a single western sycamore tree located 215 feet southwest and downgradient from well PV-4 at the Hollenbeck Canyon Wildlife Reserve (Figure 12) (Helix Environmental, 2005).

### ESTIMATION OF GROUNDWATER DRAWDOWN

The following estimate of groundwater drawdown induced by project pumping relies on the Cooper-Jacob approximation of the Theis nonequilibrium flow equation (Freeze and Cherry, 1979).

$$s = \frac{264Q}{\pi T} \log \frac{0.3Tt}{r^2S} \quad (2)$$

Where:

- s = groundwater drawdown (feet)
- Q = pumping rate (gallons per minute)
- T = transmissivity (gallons/day\*foot)
- t = time since pumping began (days)
- r = distance from pumping well (feet)
- S = groundwater storage coefficient (dimensionless)

The equation permits the calculation of drawdown at a given distance from the pumping well at a given time. The equation assumes that the transmissivity of the aquifer remains the same in all directions and that the boundaries of the aquifer are beyond the influence of pumping. Though the actual aquifer has fairly definitive boundaries, this simplification of pumping conditions may underestimate drawdown because the nearest groundwater dependent habitat is close to the aquifer boundary. The equation also does not account for groundwater recharge including the additional recharge induced by the importation of OWD water to the site. Conversely, this simplification of pumping conditions results in an overestimate of groundwater drawdown.

Eight drawdown estimates have been calculated based on varying the assumption of values for the pumping rate (Q), the duration of pumping (t), the transmissivity of the aquifer (T) and the groundwater storage coefficient (S) (Table 8). For each estimate, drawdown has been calculated at distances (r) of 100, 180, 200, 300, 500, 800, 1,000, 1,500 and 3,000 feet from the pumping well.

The following describes the rationale in assigning values to the equation's variables. The project plans to limit groundwater production (Q) to 22.2 acre-ft per year. Because of the relatively high TDS concentration in groundwater, imported water needed to supplement groundwater pumping may be blended year round to maintain a more constant water quality for the turf. Converting acre-feet to gallons per minute for use in Equation 2 provides a value of 14 gpm. Drawdown is also

calculated for the scenario that pumping is concentrated into a 6-month season, followed by six months of recovery. Under this scenario the average pumping rate is doubled to 28.0 gpm.

Transmissivity (T) at well PV-4 has been measured at 2.0 feet<sup>2</sup> per minute. As discussed previously in the sub-chapter, Groundwater Flow From Site, the decline in the water table under drought conditions similar to that experienced in 2004 would reduce the transmissivity to a value of 1.7 feet<sup>2</sup> per minute, assuming the aquifer was unconfined. Under more conservative assumptions regarding the spatial variation of hydraulic conductivity, transmissivity was assumed to be as low as 0.85 feet<sup>2</sup> per minute. Accordingly drawdown is calculated assuming transmissivity values of 1.7 and 0.85 feet<sup>2</sup> per minute. To maintain unit consistency in Equation 2, these transmissivity values are converted to equivalent values of 18,300 gallons/day\*foot and 9,200 gallons/day\*foot respectively.

The duration of pumping (t) for the year round average pumping scenario is five years, equivalent to the duration of the most recent severe drought. Converting from years to days, t is equal to 1,826 days. The duration of pumping for the 6-month scenario is six months, or 183 days.

The groundwater storage coefficient S, has not been measured at the site. Based on a long term aquifer test in a similar hydrogeologic environment in the community of Campo in San Diego County, the storage coefficient of moderately fractured igneous rock ranged from 0.003 to 0.06 with a geometric mean of 0.018 (Wiedlin & Associates, 2006b). Drawdown is calculated using a range of storage coefficient values that are lower than those observed in Campo, 0.001 and 0.01.

The combination of two pumping scenarios, two transmissivity values, and the two storage coefficient values yield eight estimates of drawdown at varying distances from well PV-4 (Table 8).

At a distance of 1,500 feet, a distance slightly closer than the distance between well PV-4 and the nearest residential property that is dependent on groundwater for domestic potable use, the estimated drawdown ranged from 1.9 feet to 0.6 feet depending upon the assumptions used. In all eight calculations, estimated drawdown is less than the domestic well groundwater threshold of 20 feet at the residential properties that are dependent on groundwater for domestic potable use.

At a distance of 200 feet, a distance slightly less than the distance between well PV-4 and the nearest groundwater dependent vegetative habitat, estimated drawdown ranged from a maximum of approximately 3.3 feet to a minimum of 0.9 foot (Table 8). In seven of the eight drawdown calculations, estimated drawdown is less than the biological groundwater threshold of 3 feet at the closest groundwater dependent habitat. Under the most conservative assumptions used for transmissivity and storage, estimated drawdown slightly exceeded the biological groundwater threshold when annual groundwater production is concentrated into a six month time period.

## ASSESSMENT OF GROUNDWATER RESOURCES

The following provides a review of the various estimates of groundwater resources developed in this study and compares them to water demand to provide an assessment of the viability of the resource to support the proposed groundwater production.

## SOURCES

The sources of groundwater in the Peaceful Valley Ranch watershed are rainfall that has percolated through the soil to the water table and imported water from OWD that reaches the water table via septic leach fields and percolation of excess irrigation water. The current estimated annual rate of groundwater recharge in the watershed from rainfall and leach fields supplied with OWD water is 320 to 510 acre-feet. Recharge from OWD-supplied irrigation has not been estimated. Groundwater flow through the moderately fractured rock aquifer at the site, to a total depth of 136 feet, is approximately 250 to 590 acre-feet per year. In the absence of groundwater pumping in the watershed, the average annual recharge rate and the rate of groundwater flow should be approximately the same. Since approximately 95 percent of the property within the watershed have access to OWD water, groundwater production is minimal. These two separate analyses of regional groundwater recharge and groundwater flow through the site both indicate that hundreds of acre-feet of groundwater flow occur within the watershed and beneath Peaceful Valley Ranch.

Previous agricultural activities at Peaceful Valley Ranch and adjoining properties relied on groundwater production from well PV-4. The most recent agricultural activities, principally the 5-year organic farm operation, required approximately 11 acre-feet of groundwater per year.

Based on water demand numbers developed for OWD's service of the proposed development, the project is expected to require approximately 153 acre-feet of water per year. It is anticipated that 22.2 acre-feet of water per year will recharge the water table via septic discharge and percolation of irrigation water. Unlike groundwater recharge from rainfall, recharge from imported water will occur on an essentially continuous basis. Consequently, limitations on the groundwater storage capacity of the rock are not a factor to the availability of the 22.2 acre-feet of water.

Lastly, groundwater quality at the site, and most likely in the vicinity of the site is poorly suited for domestic consumption. TDS concentrations typically exceed the secondary drinking water standard of 1,000 mg/l. Additionally, existing nitrate concentrations exceed the MCL in the area around and down gradient of the former organic farm.

## DEMAND

There are approximately 50 parcels in the watershed that are groundwater dependent. At a water demand of 0.5 acre-feet per year, non-discretionary groundwater production for the watershed is approximately 25 acre-feet per year. Combined with the proposed groundwater production at the site of 22.2 acre-feet per year, total non-discretionary groundwater demand for the watershed is approximately 50 acre-feet per year. As the basin is developed, the majority of properties will use imported water and will discharge waste water via septic leach fields. Hence, groundwater demand is not expected to increase significantly and groundwater recharge will be further augmented by the increase in septic recharge. Therefore, cumulative impacts with respect to groundwater supply are not expected to be significant.

## ASSESSMENT OF IMPACT FROM PROPOSED PUMPING

Groundwater flow in the watershed is well in excess of non-discretionary groundwater demand. On-site groundwater production will not be dependent on current groundwater resources. Even without the project-induced groundwater recharge that will occur at the site when imported water is delivered, regional groundwater water balance analyses, site specific cross sectional flow analyses, and a well hydraulics based drawdown analyses all indicate that there are sufficient groundwater resources available to sustain the proposed 22.2 acre-feet of annual pumping. However, as described in further detail below and in the Groundwater Monitoring Plan (Appendix A), because of the proximity of groundwater dependent habitat to well PV-4, there is a potential for exceeding the biological groundwater drawdown threshold.

Sufficient groundwater resources appear available to sustain the proposed level of pumping without approaching the residential groundwater drawdown threshold or the Groundwater Ordinance regarding depletion of groundwater storage.

A drawdown analysis assuming groundwater production of 22.2 acre-feet per year indicates that a maximum of approximately two feet of drawdown induced by project pumping may occur off-site at residential properties dependent on groundwater for domestic potable use. A threshold of 20 feet of drawdown at off-site domestic supply wells has been established to protect well yields. Hence drawdown estimates do not approach the proposed threshold (Table 8).

The same drawdown analysis indicates that depending upon the drawdown calculation assumptions, approximately 0.9 to 3.3 feet of drawdown will occur at the nearest groundwater sensitive habitat. This habitat is located approximately 215 feet southwest and down gradient of well PV-4. A threshold of three feet of drawdown at groundwater sensitive habitats has been established to protect the vitality of the habitats. Since under some of the assumed conditions, drawdown exceeded the three-foot threshold, mitigation to prevent drawdown induced by pumping at the site has been developed in the recommendations section below.

The drawdown analysis does not account for groundwater recharge from imported water that will be occurring at the site at a rate equal to the rate of groundwater pumping. Hence, the analysis overestimates drawdown. Some drawdown will occur even though the rate of pumping will be equal to the rate project-induced groundwater recharge. Drawdown will occur because project-induced recharge will occur across the site and groundwater pumping will occur in one location.

The third significance threshold, based on the County Groundwater Ordinance allows for up to a 50 percent temporary reduction in groundwater storage in response to groundwater production. The proposed fully developed project will result in no overall decrease groundwater storage because groundwater production will be limited to the amount of groundwater recharge induced by the importation of OWD water to the site. Therefore the proposed groundwater production will not result in storage reductions that will exceed the 50 percent threshold specified in the County Groundwater Ordinance. However, because groundwater recharge will be distributed across the site and groundwater pumping will be focused at well PV-4, some localized groundwater drawdown, and therefore groundwater storage reduction, will occur.

## RECOMMENDATIONS

To implement groundwater production at Peaceful Valley Ranch, the following actions are recommended. Initial groundwater production to support irrigation of the equestrian polo field shall be at the 5-year calculated historical rate at the site, less the estimated groundwater usage of the existing ranch house at Lot 5. Hence, initial groundwater production will be 10.65 acre-feet per year. This annual rate shall increase up to the maximum of 22.2 acre-feet per year as the project is developed and individual lots are connected to OWD service. Assuming the equestrian polo field is developed first and the public equestrian polo field, fire station and Lot 5 are developed last, 23 of the 47 residential lots will need to be connected to OWD before groundwater production increases beyond the site's calculated historical rate of groundwater usage.

A groundwater level monitoring program will be established that will tie groundwater production to groundwater drawdown at a monitor well to be installed in the vicinity of the nearest groundwater dependent habitat. The nearest groundwater dependent habitat, the solitary sycamore tree, is 215 feet southwest of well PV-4, and downgradient from the well. A proposed monitor well, PV-6, will be installed between the sycamore tree and the pumping well. Steep terrain and shallow bedrock conditions precludes drilling in the area immediately next to the sycamore tree. Accordingly the proposed monitor well will be located on the opposite, or east, side of the creek bed from the sycamore tree at the Hollenbeck Canyon Wildlife Area (Figure A-1). The Hollenbeck Canyon Wildlife Area is managed by the California Department of Fish and Game (DF&G). Accordingly, the proposed well location is contingent on DF&G's authorization, timely response, and reasonable access and liability requirements.

Proposed monitoring well PV-6 will be completed to a depth approximately 10 feet below the groundwater threshold; a depth that will probably be approximately 45 feet. It is likely that bedrock will be encountered before total depth is reached. Accordingly the well may need to be completed using a combination of air rotary drilling and hollow stem auger methods. The well shall be completed to the standards defined in the San Diego County SAM Manual.

These specific actions are further defined in the groundwater monitoring and mitigation plan (Appendix A).

- Install a cumulative flow meter at well PV-4 and record water usage monthly.
- Measure water levels at wells PV-2, PV-4, and the proposed well PV-6 every month.
- Destroy wells PV-1 (once the Dedrick's Life Estate Agreement has ended), PV-3, and OW-1 through OW-9 following the guidance for well destruction in the DEH Site Assessment Manual.
- Prepare and submit to DPLU an annual groundwater monitoring report within 28 calendar days after the end of the annual monitoring period.

- The annual monitoring report shall include groundwater production and groundwater level data and will document shutdowns in groundwater production induced by groundwater levels dropping below the biological groundwater threshold. The report will also evaluate whether groundwater production was in compliance with the restriction that production will not exceed development-induced groundwater recharge as calculated using the method summarized in Table 6. The report will include an estimate of project development-induced groundwater recharge based on an inventory of what parcels have been developed and are using OWD water.

The frequency and areal extent of groundwater level monitoring are estimated based on non site specific experience. Once monitoring data has been collected for a minimum of one year, revisions in the monitoring and mitigation program may be advisable and may be implemented at the discretion of the DPLU director.

### **LIMITATIONS**

Hydrogeologic studies are characterized by uncertainty due to the non-uniformity of geologic formations, the unpredictability of rainfall magnitude and duration, and the extent of groundwater use beyond the project boundaries. The conclusions made herein are based on the assumption that conditions do not deviate appreciably from those observed at the specific locations where data was acquired. No guarantees on the performance of the pumping well and resultant water table drawdown are made herein.

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**TABLES**

TABLE 1  
MONTHLY AVERAGE REFERENCE EVAPO-TRANSPIRATION  
ZONE 9

	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Reference Evapo-Transpiration Zone 9	2.2	2.8	4.0	5.1	5.9	6.6	7.4	6.8	5.7	4.0	2.7	1.9	55.1
Notes: From California Irrigation Management Information System Reference Evapo-Transpiration Map; <a href="http://www.cimis.water.ca.gov/cimis/images/etomap.jpg">www.cimis.water.ca.gov/cimis/images/etomap.jpg</a>													

TABLE 2  
PROPERTIES IN THE WATERSHED WITH APPLICATIONS PENDING AT THE DEPARTMENT OF PLANNING AND LAND USE

No. on RBF Exhibit	Project Name	Total Acreage	Proposed Land Use	Proposed No. of Lots	Water Source	Method of Wastewater Treatment/Disposal
1	Jamul Indian Village	101	-	-	OTAY	SEPTIC
2	TPM 20599 RLP1	6.2	SF RESIDENTIAL	4	OTAY	SEPTIC
3	TPM 20868	5.14	SF RESIDENTIAL	2	OTAY	SEPTIC
4	P03-101	-	TELECOM FACILITY	-	-	-
5	TM 5154 rlp1	11.2	SF RESIDENTIAL	5	OTAY	SEPTIC
6	Jamul Highlands TM 52689 RPL2	60	SF RESIDENTIAL	23	OTAY	SEPTIC
7	Rancho Jamul Estates II	223	SF RESIDENTIAL	68	OTAY	SEPTIC

TABLE 3  
PEACEFUL VALLEY RANCH AND VICINITY  
WATER WELL AND GROUNDWATER ELEVATION INFORMATION

Well Identification	Function	Depth (feet)	Casing Stickup (feet)	Depth to Water <sup>1</sup> 9/16/03	Depth to Water <sup>1</sup> 2/27/04	Depth to Water <sup>1</sup> 6/21/04	Depth to Water <sup>1</sup> 9/24/04	Depth to Water <sup>1</sup> 11/11/04	Depth to Water <sup>1</sup> 1/27/05	Depth to Water <sup>1</sup> 2/21/05	Depth to Water <sup>1</sup> 4/6/05	Groundwater Elevation 2/27/04 <sup>2</sup>	Groundwater Elevation 6/21/04 <sup>2</sup>	Groundwater Elevation 9/24/04 <sup>2</sup>	Groundwater Elevation Nov 2004 <sup>2</sup>	Groundwater Elevation 1/27/05 <sup>2</sup>	Groundwater Elevation 2/21/05 <sup>2</sup>	Groundwater Elevation 4/6/05 <sup>2</sup>
PV-1	Active Residential Well	565	2.8		18.25	25.61	nm <sup>3</sup>	24.10	12.35	pumping	10.88	826.55	819.19	nm <sup>3</sup>	820.70	832.01	pumping	833.48
PV-2	Inactive Well	331	4.0	17.30	13.64	16.26	nm <sup>3</sup>	11.40	4.32	3.84	3.99	857.66	855.04	nm <sup>3</sup>	859.90	866.98	867.46	867.61
PV-3	Inactive Hand Dug Well	48	0.0	nm <sup>3</sup>	18.70	25.91	nm <sup>3</sup>	23.20	12.88	10.91	10.04	825.66	818.45	nm <sup>3</sup>	821.16	831.92	833.89	834.76
PV-4	Recently Active Farm Well	136	2.0	nm <sup>3</sup>	no access	no access	29.00	27.00	17.22	14.66	13.15	no access	no access	808.15	810.15	819.93	822.49	824.00
OW-1	Observation Well	39	0	nm <sup>3</sup>	not built	dry	nm <sup>3</sup>	dry	34.76	35.22	30.28	not built	< 879.71	nm <sup>3</sup>	< 879.71	884.15	883.69	888.63
OW-2	Observation Well	30	0	nm <sup>3</sup>	not built	dry	nm <sup>3</sup>	dry	dry	dry	dry	not built	< 870.38	nm <sup>3</sup>	< 870.38	< 870.38	< 870.38	< 870.38
OW-3	Observation Well	30	0	nm <sup>3</sup>	not built	dry	nm <sup>3</sup>	dry	dry	dry	dry	not built	< 849.77	nm <sup>3</sup>	< 849.77	< 849.77	< 849.77	< 849.77
OW-4	Observation Well	29	0	nm <sup>3</sup>	not built	dry	nm <sup>3</sup>	dry	dry	dry	dry	not built	< 923.64	nm <sup>3</sup>	< 923.64	< 923.64	< 923.64	< 923.64
OW-5	Observation Well	26	0	nm <sup>3</sup>	not built	dry	nm <sup>3</sup>	dry	dry	dry	dry	not built	< 906.18	nm <sup>3</sup>	< 906.18	< 906.18	< 906.18	< 906.18
OW-6	Observation Well	29	0	nm <sup>3</sup>	not built	dry	nm <sup>3</sup>	dry	dry	dry	dry	not built	< 828.55	nm <sup>3</sup>	< 828.55	< 828.55	< 828.55	< 828.55
OW-7	Observation Well	42	0	nm <sup>3</sup>	not built	39.00	nm <sup>3</sup>	38.56	37.62	34.05	30.61	not built	819.42	nm <sup>3</sup>	819.86	820.80	824.37	827.81
OW-8	Observation Well	58	0	nm <sup>3</sup>	not built	not built	nm <sup>3</sup>	33.25	24.35	20.92	18.52	not built	not built	nm <sup>3</sup>	827.90	836.80	840.23	842.63
OW-9	Observation Well	83	0	nm <sup>3</sup>	not built	not built	nm <sup>3</sup>	46.19	33.78	30.56	25.10	not built	not built	nm <sup>3</sup>	831.55	843.96	847.18	852.64
Stoddard Well	Residential Irrigation Well	> 300	not measured	nm <sup>3</sup>	no access	no access	nm <sup>3</sup>	no access	no access	no access	no access	no access	no access	nm <sup>3</sup>	no access	no access	no access	no access
Hendrix Hand Dug Well	Residential Irrigation Well	29	3.65	nm <sup>3</sup>	19.80	21.01	nm <sup>3</sup>	18.66	9.38	8.74	9.07	850.40	849.19	nm <sup>3</sup>	851.54	860.82	861.46	861.13
Parker Well	Inactive	1,400	0.7	nm <sup>3</sup>	65.70	64.10	nm <sup>3</sup>	63.09	57.50	55.75	50.98	942.96	944.56	nm <sup>3</sup>	945.57	951.16	952.91	957.68
J	Leach Field Exploration	21.79	1.2	nm <sup>3</sup>	18.35	21.00	nm <sup>3</sup>	17.89	10.52	10.15	10.29	858.48	855.83	nm <sup>3</sup>	858.94	866.31	866.68	866.54
C	Leach Field Exploration	21.44	1.7	nm <sup>3</sup>	19.57	Dry	nm <sup>3</sup>	Dry	12.00	10.52	10.04	826.83	> 823.50	nm <sup>3</sup>	< 823.50	834.40	835.88	836.36
D	Leach Field Exploration	22.8	1.4	nm <sup>3</sup>	18.82	Dry	nm <sup>3</sup>	23.40	11.75	11.04	10.58	835.87	> 831.00	nm <sup>3</sup>	831.29	842.94	843.65	844.11
E	Leach Field Exploration	19.86	1.9	nm <sup>3</sup>	18.58	Dry	nm <sup>3</sup>	18.88	10.99	9.07	8.94	819.13	> 816.41	nm <sup>3</sup>	818.83	826.72	828.64	828.77

Notes: 1) Measured in feet from top of casing; 2) feet mean sea level 3) nm = not measured

**TABLE 4**  
**SITE SPECIFIC TRANSMISSIVITY AND HYDRAULIC CONDUCTIVITY**

Well No.	Hydrogeologic Unit Well is Completed In	Transmissivity (feet <sup>2</sup> /minute)	Hydraulic Conductivity (feet/minute)	Method
OW-1	Decomposed Granitics	Not Applicable	$7.7 \times 10^{-5}$	Slug Withdrawal, Bouwer & Rice
OW-7	Decomposed Granitics	Not Applicable	$9.6 \times 10^{-4}$	Slug Withdrawal, Bouwer & Rice
OW-8	Moderately Fractured Granitics	Not Applicable	$7.5 \times 10^{-4}$	Slug Withdrawal, Bouwer & Rice
Boring C	Alluvium	Not Applicable	$2.2 \times 10^{-2}$	Slug Withdrawal, Bouwer & Rice
Boring D	Alluvium & Decomposed Granitics	Not Applicable	$1.7 \times 10^{-2}$	Slug Withdrawal, Bouwer & Rice
Boring J	Alluvium	Not Applicable	$1.5 \times 10^{-3}$	Slug Withdrawal, Bouwer & Rice
PV-1	Slightly Fractured Granitics	0.002	$4 \times 10^{-6}$	Constant Discharge (short- term) Theis
PV-2	Moderately Fractured Granitics	0.18 to 0.27	$6 \times 10^{-4}$ to $9 \times 10^{-4}$	Step Drawdown, Eden- Hazel
PV-4	Moderately Fractured Granitics	2.0	$1.6 \times 10^{-2}$	Constant Discharge (53- hour) Theis Recovery

**TABLE 5**  
**ESTIMATED GROUNDWATER RECHARGE FOR WATERSHED**

Source of Recharge	Rainfall Rate (ft/yr)	Recharge Rate (Percent)	Area (acres)	Total (acre-ft/yr)
Precipitation	1.25 (15")	7 %	4,300	375
Precipitation-Limited by Groundwater Storage	1.25 (15")	3.5 %	4,300	188
	Disposal Rate (acre-ft/yr per Dwelling)	Recharge Rate (Percent)	No. of Dwellings	Total (acre-ft/yr)
Septic Leachate	0.25	99 %	533	132
Septic Leachate	0.25	95 %	533	127
Upper Range of Estimate of Recharge from Precipitation and Septic				507
Lower Range of Estimate of Recharge from Precipitation and Septic				315
Notes: Recharge estimates do not account for recharge from infiltration of irrigation water supplied by the Otay Water District.				

TABLE 6  
WATER DEMAND SUMMARY AND PROJECT-INDUCED GROUNDWATER RECHARGE ESTIMATE

Use	Total Water Demand			Septic Portion of Water Demand			Recharge	Irrigation Portion of Water Demand				Recharge					
	Unit of Demand	Quan.	Demand Factor (GPD/Unit) or (GPD/Ac)	Total Demand (GPD)	Total Demand (Ac-Ft/Yr)	Domestic Water		Total Domestic Demand (Ac-Ft/Yr)	Domestic Demand as % of Total Demand	Recharge to Ground Water from Septic (Ac-Ft/Yr)	Irrigation Demand Factor (GPD/Unit) or (GPD/Ac)		Ground Water		Total Irrigation Demand as % of Total Demand	Recharge to Ground Water from Irrigation (Ac-Ft/Yr)	
						Demand (GPD/Unit)							Demand (GPD)	Irrigation Demand (GPD) OWD Water			Irrigation Demand (Ac-Ft/Yr) OWD Water
46 - 2-6ac. Estate Residential (New)	Residential Unit	46	2,100	96,600	108.2	210	9,660	10.8	10%	9.3	1,890	86,940	97.4	0	0.0	90%	9.7
1 - 6.7ac. Public Equestrian Facility	Equivalent Use Acreage	1	1,785	1,785	2.0	1-Res Unit + 6 Guests / Day @ 15 GPD / Guest	300	0.3	17%	0.3	1,485	1,485	1.7	0	0.0	83%	0.2
1 - 18.0ac. Portion of Private Equestrian & Polo Training Facility (Excl. Polo Field)	Equivalent Use Acreage	3	1,785	5,355	6.0	1-Res Unit + 6 Guests //Day @ 15 GPD / Guest	300	0.3	6%	0.3	1,485	5,055	5.7	0	0.0	94%	0.6
1 - 12.8ac. Polo Field Portion of the Equestrian & Polo Training Facility	Acreage	12.8	2,232	28,570	32.0	0	0	0.0	0%	0.0	2,232	8,755	9.8	19,815	22.2	69%	1.0
1 - 3.7ac. Fire Station	Acreage	3.7	1,785	1,915	2.1	10 FT Staff @ 90 GPD + 19 PT Staff / Guests @ 15 GPD / Guest	344	0.4	18%	0.3	1,441	1,572	1.8	0	0.0	82%	0.2
TOTAL WATER DEMAND FOR OWD WATER STUDY NOT INCLUDING LOT 5 (EXISTING RANCH HOUSE)				134,225	150.4		10,604	11.9		10.2		103,807	116.3	19,815	22.2		11.6
GROUNDWATER RECHARGE INDUCED BY IMPORTING WATER (NOT INCLUDING LOT 5)																	
Estate Residential (Existing Ranch House)	Residential Unit	1	2,100	2,100	2.4	210	210	0.2	10%	0.2	1,890	1,890	2.1	0	0.0	90%	0.2
TOTAL WATER DEMAND FOR OWD WATER STUDY INCLUDING LOT 5 (EXISTING RANCH HOUSE)				136,325	152.7		10,814	12.1		10.4		105,697	118.4	19,815	22.2		11.8
GROUNDWATER RECHARGE INDUCED BY IMPORTING WATER (INCLUDING LOT 5)																	22.2

TABLE 7  
SUMMARY OF NITRATE AND TOTAL DISSOLVED SOLIDS IN GROUNDWATER

Well ID	September-October 2003		February 2004		June 2004		January 2005		February 15, 2005 10:26 AM			February 15, 2005 4:23 PM			February 16, 2005 9:05 AM		
	Nitrate as N (mg/l)	TDS (mg/l)	Nitrate as N (mg/l)	TDS (mg/l)	Nitrate as N (mg/l)	TDS (mg/l)	Nitrate as N (mg/l)	TDS (mg/l)	Nitrate as N (mg/l)	TDS (mg/l)		Nitrate as N (mg/l)	TDS (mg/l)		Nitrate as N (mg/l)	TDS (mg/l)	
D	-	-	1.72	373	-	-	5.15	1220	-	-		-	-		-	-	
E	-	-	3.92	367	-	-	5.30	918	-	-		-	-		-	-	
J	-	-	-	-	0.57	1,520	0.90	1,270	-	-		-	-		-	-	
PV-1	12	1,300	-	-	13.2	1,120	4.59	933	-	-		-	-		-	-	
PV-2	0.96	1,300	-	-	-	-	< 0.05	749	-	-		-	-		-	-	
PV-3	-	-	-	-	13.2	1,120	4.93	736	-	-		-	-		-	-	
PV-4	-	-	-	-	13.0	1,000	12.1	1,130	-	-		-	-		-	-	
OW-7	-	-	-	-	9.47	912	14.7	546	11.00	1,060		9.75	1,060		10.50	1,080	

**TABLE 8**  
**ESTIMATED GROUNDWATER DRAWDOWN BASED ON COOPER-JACOB EQUATION**

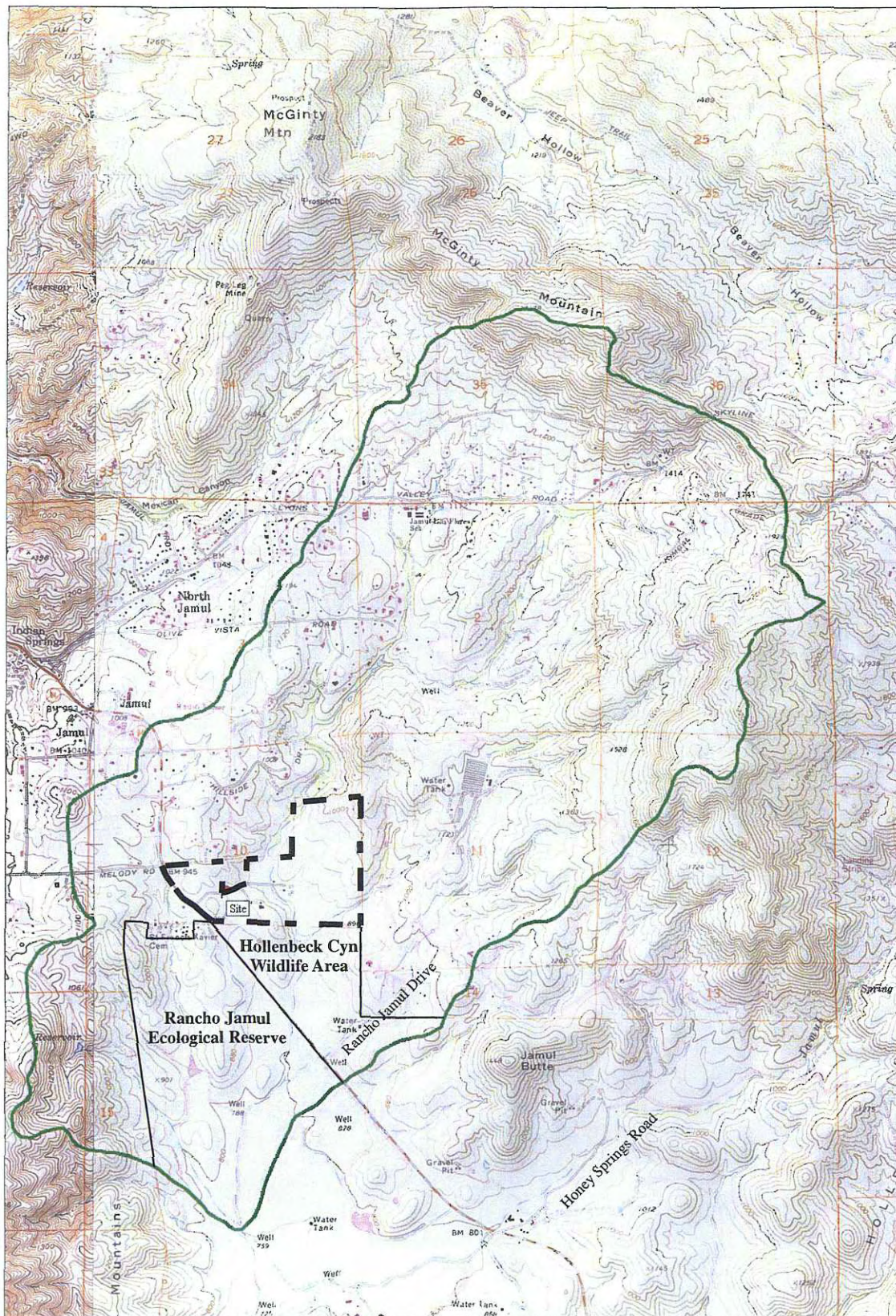
Distance from PV-4 (feet)	Assumed Transmissivity (ft <sup>2</sup> /min)			
	0.85		1.7	
	Assumed Storage Coefficient (dimensionless)			
	0.001	0.01	0.001	0.01
	Estimated 5-Year Drawdown (feet) Induced by Year Round Pumping Averaging 14.0 gallons per minute			
100	2.3	1.9	1.2	1.0
180	2.1	1.7	1.1	0.9
200	2.1	1.7	1.1	0.9
300	1.9	1.5	1.0	0.8
500	1.7	1.3	0.9	0.7
800	1.6	1.2	0.8	0.6
1,000	1.5	1.1	0.8	0.6
1,500	1.4	0.9	0.7	0.5
3,000	1.1	0.7	0.6	0.4

Note: Assumed pumping rate = 14.0 gallons per minute, equivalent to 22.6 acre-feet per year.

Distance from PV-4 (feet)	Assumed Transmissivity (ft <sup>2</sup> /min)			
	0.85		1.7	
	Assumed Storage Coefficient (dimensionless)			
	0.001	0.010	0.001	0.010
	Estimated 6-Month Drawdown (feet) Induced by a 6-month Pumping Season Averaging 28.0 gallons per minute			
100	3.8	3.0	2.0	1.6
180	3.4	2.6	1.8	1.4
200	3.3	2.5	1.8	1.4
300	3.0	2.2	1.6	1.2
500	2.7	1.9	1.5	1.1
800	2.3	1.5	1.3	0.9
1,000	2.2	1.4	1.2	0.8
1,500	1.9	1.1	1.1	0.7
3,000	1.4	0.6	0.8	0.4

Note: Assumed pumping rate = 28.0 gallons per minute for 6-month pumping season, equivalent to 22.6 acre-feet per year.

## **FIGURES**

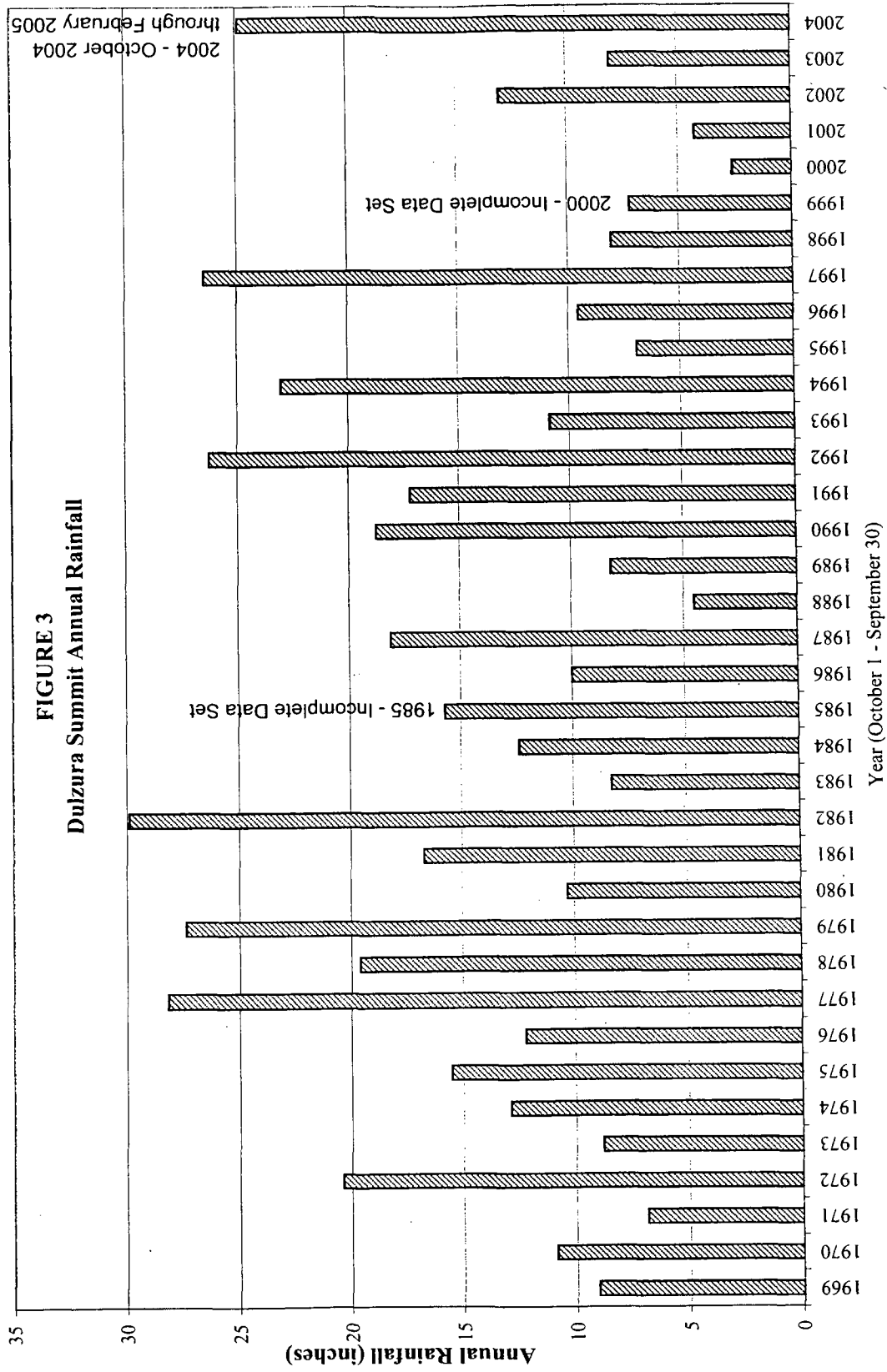


**FIGURE 1 PROJECT SITE AND SURROUNDING WATERSHED**

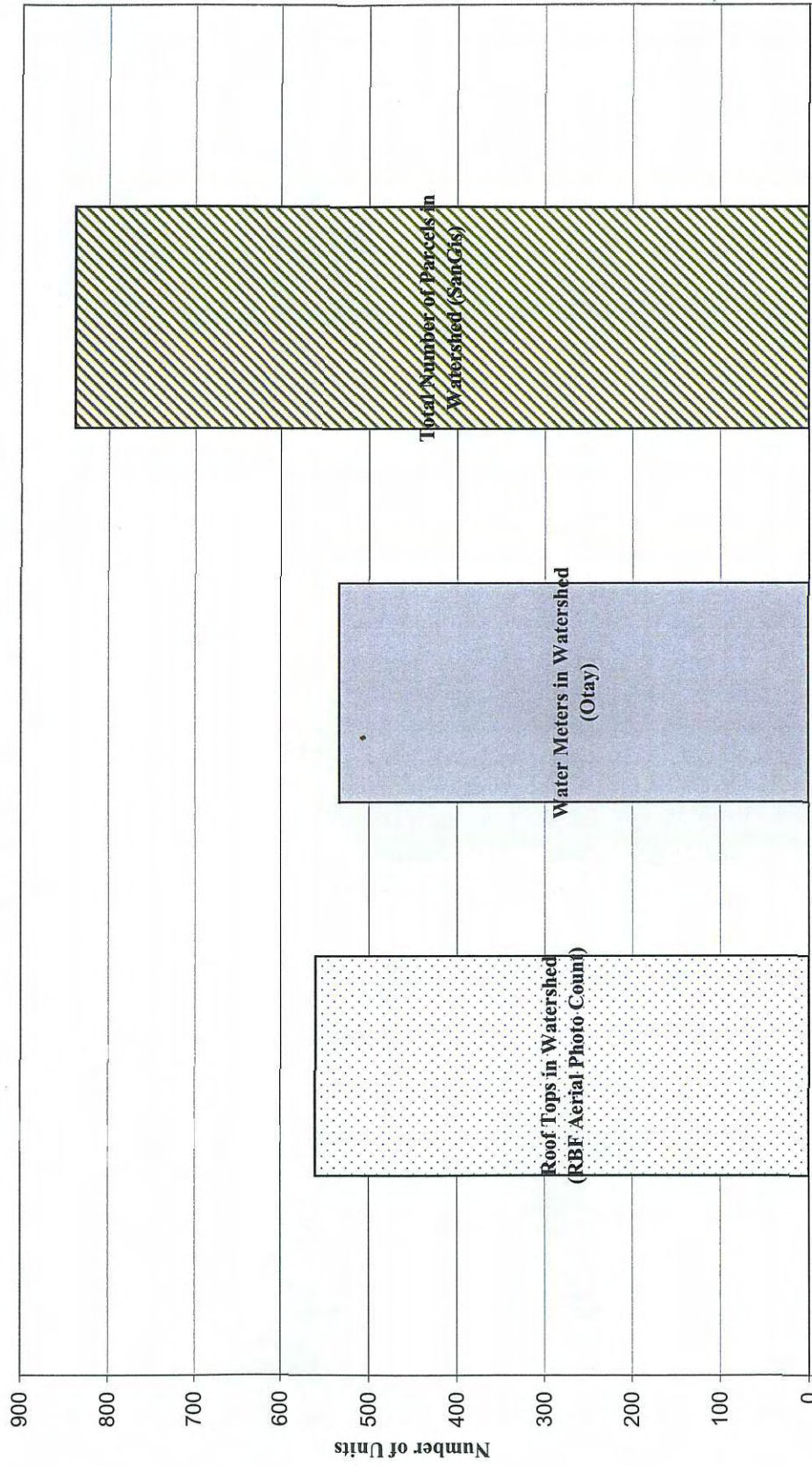
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 METERS  
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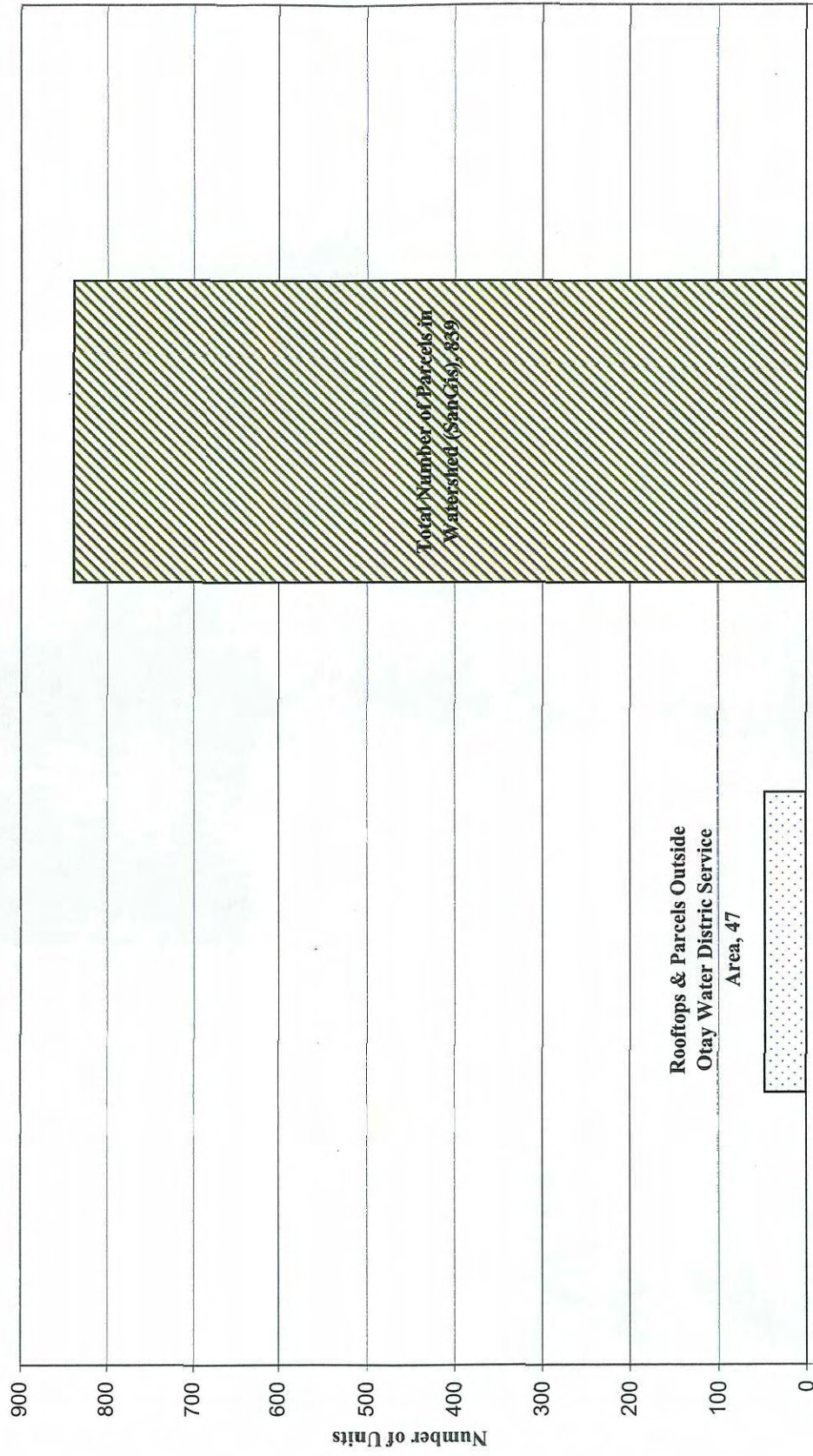


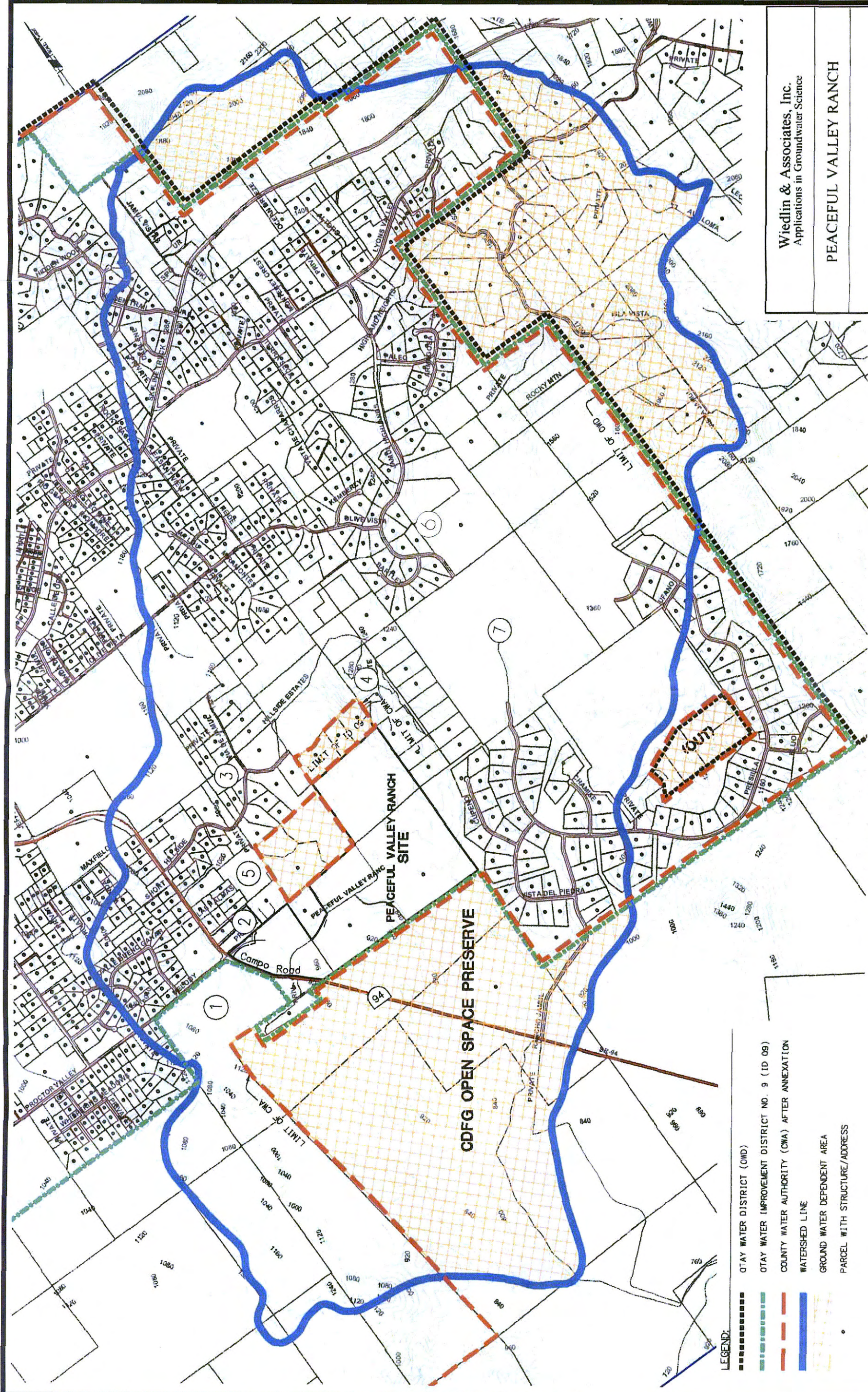


**FIGURE 4**  
**Water Service and Extent of Development in Watershed**



**FIGURE 5**  
**Estimated Number of Groundwater Dependent Parcels**





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FIGURE 6  
GROUNDWATER DEPENDENT AREAS

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DISCRETIONARY PROJECTS - PENDING DPLU REVIEW

No. in Exhibit	Project Name	Total Acreage	Proposed Land Use	Proposed No. of Lots	Water Source	Method of Wastewater Treatment/Disposal
1	Jarvis Ridge Village	17.1	RESIDENTIAL	4	OTAY	SEPTIC
2	FM 2000 R/L 1	5.2	RESIDENTIAL	7	OTAY	SEPTIC
3	FM 2000	5.4	RESIDENTIAL	7	OTAY	SEPTIC
4	FM 2000	5.4	RESIDENTIAL	7	OTAY	SEPTIC
5	FM 2000	5.4	RESIDENTIAL	7	OTAY	SEPTIC
6	FM 2000	5.4	RESIDENTIAL	7	OTAY	SEPTIC
7	FM 2000	5.4	RESIDENTIAL	7	OTAY	SEPTIC

**FIGURE 7**  
**HYDROGEOLOGIC CROSS-SECTION ALONG SOUTHERN SITE BOUNDARY**  
**PEACEFUL VALLEY RANCH**

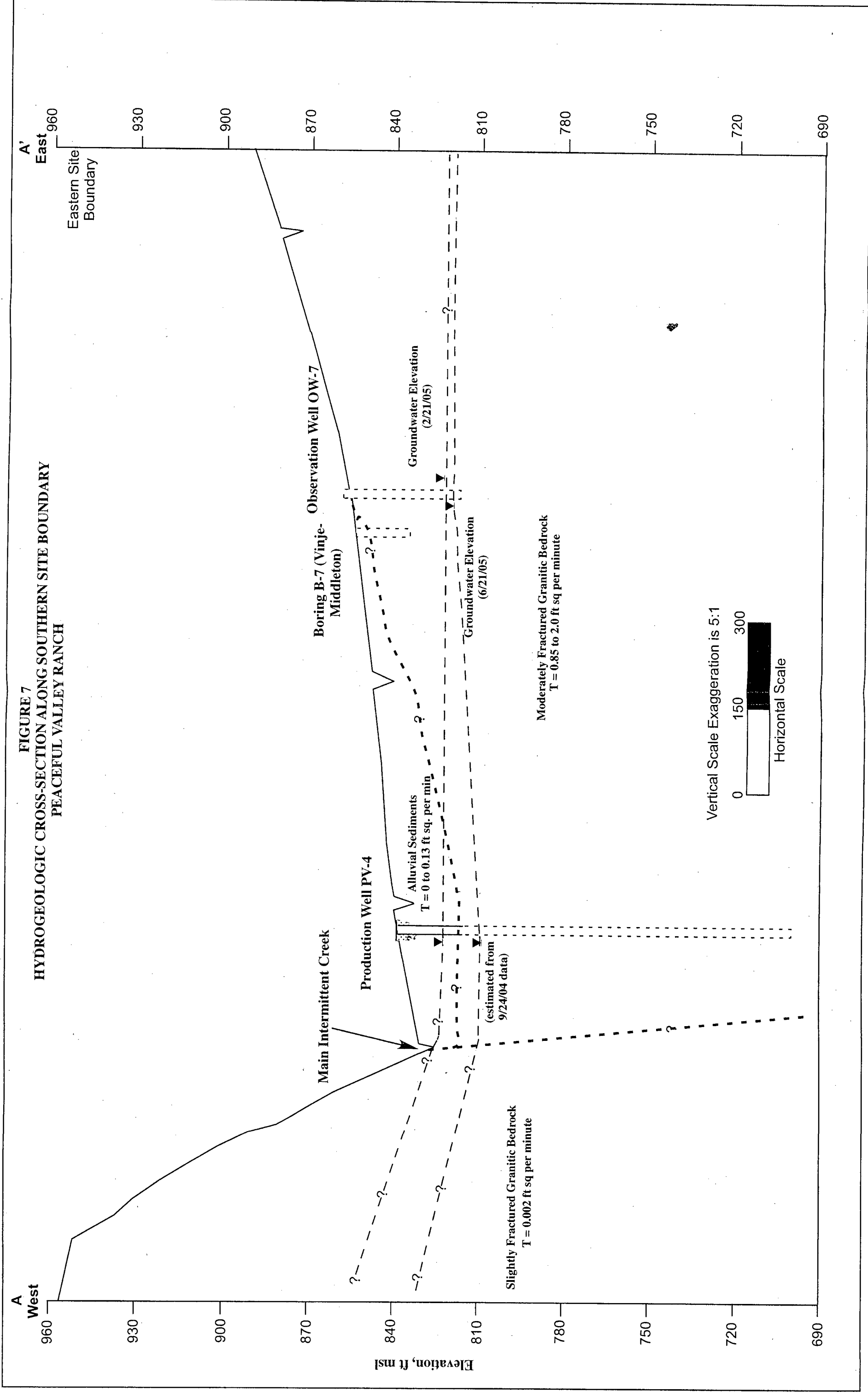
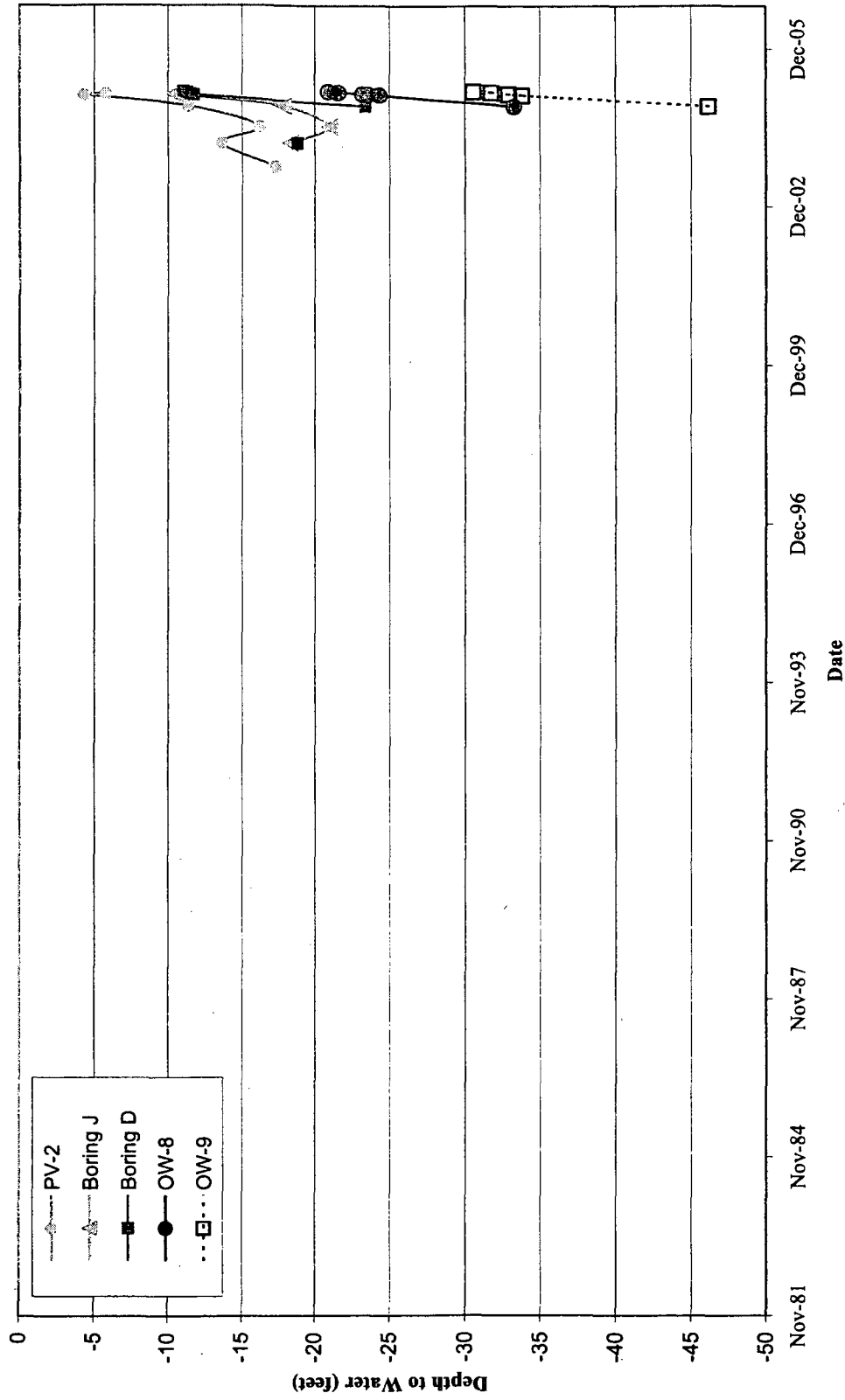
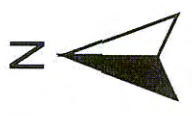
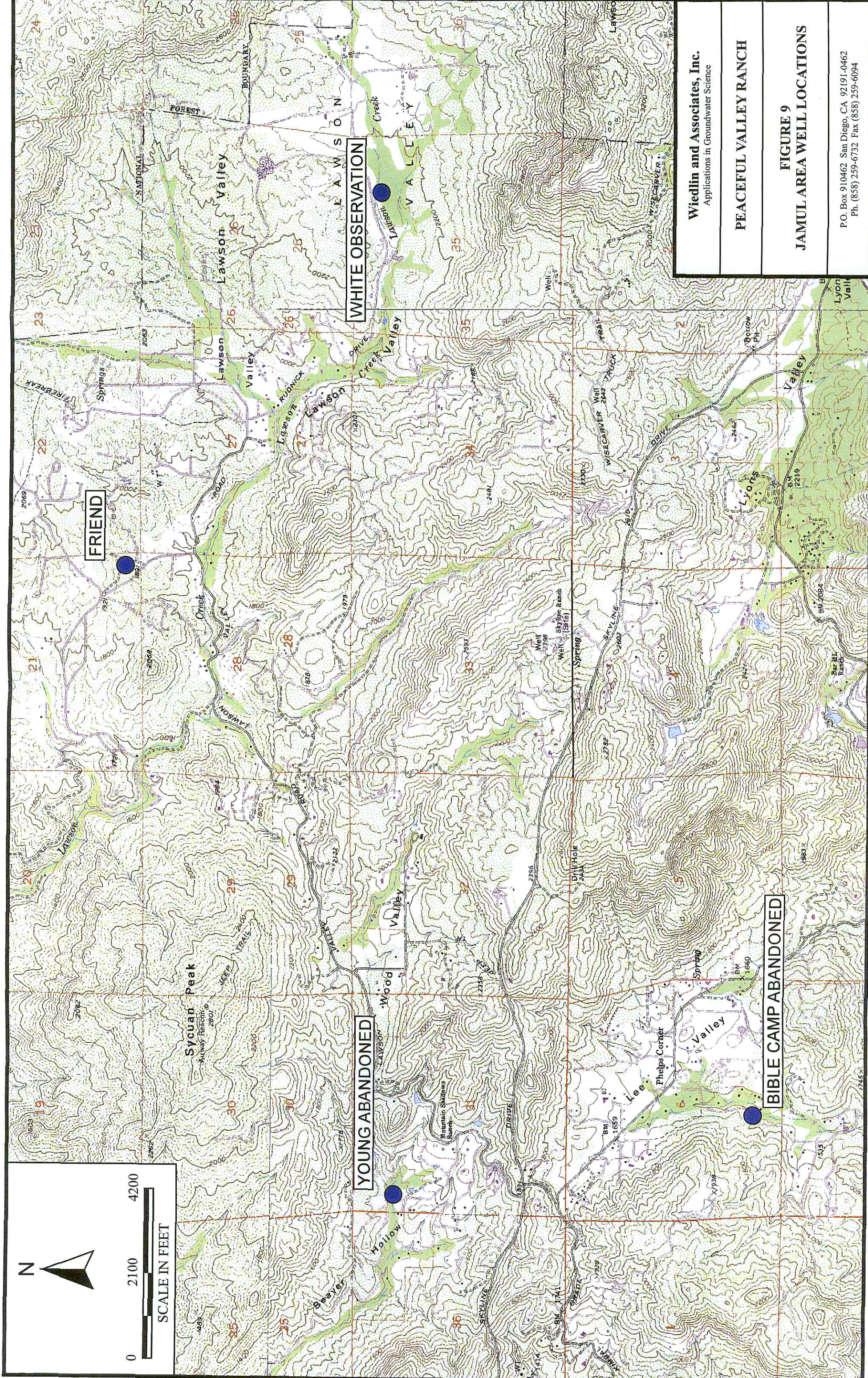


Figure 8  
On Site Groundwater Level Fluctuations

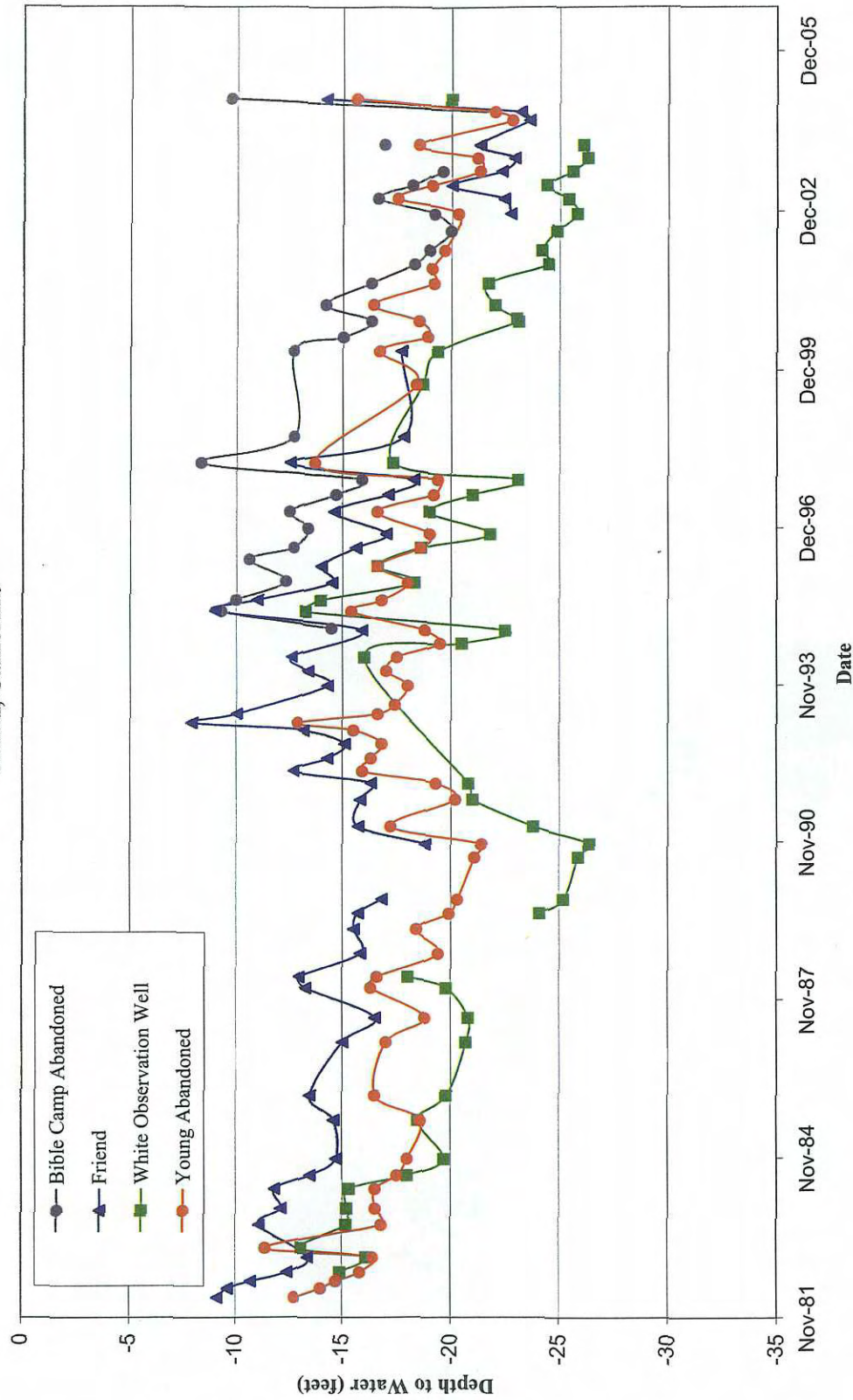




SCALE IN FEET

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<b>FIGURE 9</b> <b>JAMUL AREA WELL LOCATIONS</b>
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**Figure 10**  
**Long Term Groundwater Level Fluctuations**  
**Jamul, California**



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**FIGURE 11  
GROUNDWATER ELEVATIONS  
JANUARY 27, 2005**

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Well Location, Designation, and Corresponding  
Groundwater Elevation in Parentheses  
  
Groundwater Contour Line and Designation  
(Feet Above Mean Sea Level)  
  
Land Surface Index Contour Lines  
(Feet Above Mean Sea Level)  
  
Land Surface Standard Contour Lines  
(Feet Above Mean Sea Level)

PV-1  
(831)

800

800

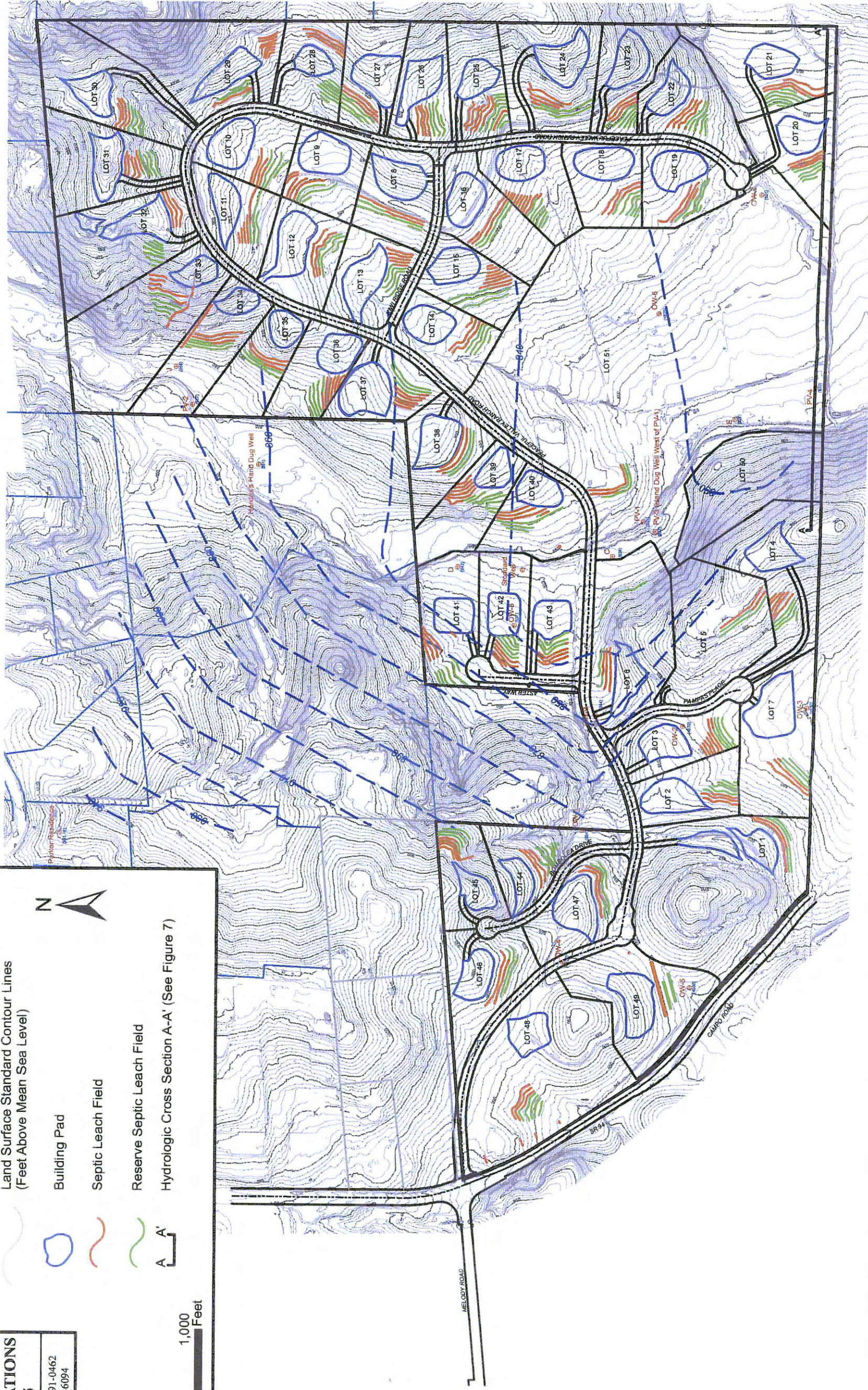
800

Building Pad

Septic Leach Field

Reserve Septic Leach Field

Hydrologic Cross Section A-A' (See Figure 7)



# LEGEND

- Jurisdictional Areas**
- SB Streambed
  - CLOW Coast Live Oak Woodland
  - RW Riparian Woodland
  - AG Agriculture (Isolated sycamore tree)
  - Waters of the U.S. (width shown in feet)
  - Waters of the U.S. Area
  - Waters of the U.S./County Jurisdictional/RPO Wetlands
  - County Jurisdictional/RPO Wetlands
  - RPO Buffer

## Proposed Project

- Project Impacts
- Limited Building Zone
- Biological Open Space
- Groundwater Monitoring Location \*
- Sycamore Tree ○



Note:  
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

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## PEACEFUL VALLEY RANCH

### FIGURE 12 JURISDICTIONAL WETLANDS

Modified from map prepared by Helix Environmental Planning, Inc.  
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Ph 858 259-6732 Fax 858 259-6094

## **APPENDICES**

**APPENDIX A**  
**GROUNDWATER MONITORING AND MITIGATION PLAN**  
**PEACEFUL VALLEY RANCH**

**March 19, 2007**

## INTRODUCTION

The Major Use Permit for Peaceful Valley Ranch Lot 51 – Private Stable and Polo Training Facility contains conditions that limit the extraction of groundwater to an amount not exceeding the calculated groundwater recharge associated with the project's development. Based on the groundwater recharge analysis presented in the Groundwater Resource Evaluation for Peaceful Valley Ranch, at full development groundwater extraction shall not exceed 22.2 acre-feet per year. Additionally, groundwater drawdown calculations suggest that under conservative assumptions defining site hydrogeologic conditions there is a potential for groundwater drawdown from on-site pumping to exceed the biological groundwater drawdown threshold of three feet. This plan provides measures to mitigate groundwater drawdown from on-site pumping by monitoring the groundwater level near the closest groundwater sensitive habitat and reducing and/or terminating production when groundwater levels approach or exceed the threshold.

Groundwater production shall be tied to project development and the actual amount of groundwater pumped each year shall be determined using the recharge factors for each lot/land use cited in Table A-1. Use of groundwater is limited to the irrigation of Lot 51. For the duration of the Dedrick Life Estate Agreement, groundwater may be pumped from well PV-1 for domestic and irrigation requirements at the existing ranch house on Lot 5. In the event that, within the groundwater use limitation set forth above, there is insufficient groundwater to adequately irrigate the polo field, irrigation will be supplemented with potable water from the Otay Water District.

The following describes the technical basis for applying the biological groundwater threshold as well as monitoring, analysis and reporting procedures by which the County of San Diego can ensure that the conditions and criteria relating to groundwater extraction are being satisfied on an on-going basis. Experience has shown at other sites that as groundwater monitoring information is collected over time, knowledge of site conditions improves and appropriate monitoring and mitigation requirements can change. As such, the specific monitoring, mitigation and reporting requirements defined herein are subject to change at the discretion of the Director of the Department of Planning and Land Use (DPLU) as supported by groundwater monitoring data collected at the site over time. A minimum of one year of monitoring data is required before changes in the program are considered.

## PROCEDURE TO ESTABLISH THE BIOLOGICAL GROUNDWATER THRESHOLD

DPLU has established that groundwater drawdown at locations where groundwater sensitive habitat occurs shall not exceed three feet referenced to low historic groundwater levels. Historic groundwater level low has been estimated based on the groundwater level measured at well PV-4 on September 24, 2004, about two weeks before the end of a five year regional drought. Well PV-4, though used as an agricultural supply well in the past, had not been extensively pumped for at least a month before the water level measurement was obtained. Depth to groundwater was measured at 29 feet below the top of casing, an elevation of 808 feet above mean sea level (msl).

The nearest groundwater dependent habitat, the solitary sycamore tree, is at the Hollenbeck Canyon Wildlife Area approximately 215 feet southwest of well PV-4. Compared to well PV-4, the tree is located on the opposite, or west, side of the intermittent creek. The terrain is steep and rocky in this area and access for a drill rig immediately adjacent to the tree is poor. The nearest practical location for an observation well, proposed well PV-6, is on the east side of the intermittent creek on a bearing with the sycamore tree and well PV-4 (Figure A-1). This location is at the Hollenbeck Canyon Wildlife Area. The area is managed by the California Department of Fish and Game (DF&G).

Assuming the DF&G will allow for the installation of the observation well in a timely manner and with reasonable access and liability requirements (Attachment A-1), the well shall be installed to an elevation of approximately 790 feet (Figure A-2) and a probable depth of approximately 45 feet. This depth provides for approximately three feet of fall of the water table between the proposed location and well PV-4, three feet of drawdown based on the groundwater threshold requirements, and approximately 10 additional feet of penetration into the aquifer to ensure the water table can be monitored in the event that the water table declines below the threshold elevation.

The groundwater elevation shall be measured concurrently at well PV-4 during non-pumping conditions and at well PV-6. These measurements shall be made three times over a period of at least two weeks.

The specific groundwater threshold elevation shall be established at proposed well PV-6 using the following equation:

Biological Groundwater Threshold Elevation = 808 ft msl - 3 feet maximum drawdown - (the average of (groundwater elevation at well PV-4 - groundwater elevation at well PV-6)).

In the meantime an estimate of the elevation of the threshold can be made based on groundwater elevations measured from wells located up and down gradient of the expected location for monitor well PV-6 (Figure A-3). Based on the groundwater gradient calculated from groundwater elevations measured on November 21, 2005 and the anticipated location of monitoring well PV-6, the groundwater elevation at PV-6 is approximately 3 feet lower than the elevation at well PV-4 (Figure A-3). Hence:

Estimated Biological Groundwater Threshold Elevation = 808 ft msl - 3 feet maximum drawdown - 3 feet of water table gradient fall = 802 feet msl.

## **GROUNDWATER MONITORING AND MITIGATION PROCEDURES**

1. The Lot 51 Owner shall retain a hydrogeologist, certified by the State of California, to direct the groundwater monitoring program defined herein.

2. Install a cumulative flow meter at well PV-4 and record groundwater usage monthly.
3. Install a cumulative flow meter on the Otay Water District (OWD) line that supports the equestrian polo field and record OWD water usage monthly.
4. Construct an observation well, designated PV-6, as close practically possible to the nearest groundwater dependent habitat to measure groundwater elevation with respect to biological groundwater threshold. Anticipated well construction details are presented in Figure A-2.
5. Measure water levels once a month at wells PV-2, PV-4, and PV-6 (Figure A-1). Groundwater levels shall be measured after the pumping well, PV-4 has been shut off a minimum of four hours. The remaining wells at Peaceful Valley Ranch shall be destroyed following the technical specifications described in the San Diego County Environmental Health Site Assessment and Mitigation Manual (Table A-2). Well PV-1 shall not be destroyed until after the Dedrick Life Estate Agreement is completed.
6. Limit the groundwater pumping rate to no greater than 20 gpm when the groundwater elevation at well PV-6 is within three feet of the biological groundwater threshold elevation as measured after a minimum of four hours of pumping inactivity at well PV-4. Under this groundwater level condition at well PV-6, groundwater level measurements shall be taken weekly. Terminate groundwater pumping at well PV-4 when the groundwater elevation at well PV-6 is equal to or less than the biological groundwater threshold elevation after a minimum of four hours of pumping inactivity at well PV-4. Groundwater pumping at well PV-4 may resume 30 consecutive days after the groundwater elevation at well PV-6 recovers above the groundwater elevation threshold.
7. Determine the allowable annual rate of groundwater production based on the calculation of development-induced groundwater recharge to the site associated with the development of the Peaceful Valley Ranch project. Development-induced groundwater recharge shall be calculated by adding the sum of the recharge rates for the various land uses at Peaceful Valley Ranch (Table A-1). The amount of recharge associated with each newly completed and occupied lot to be prorated from the date of issuance of the Certificate of Occupancy ("CO") for that occupied lot to the end of the monitoring year.
8. If the biological groundwater threshold elevation is exceeded, the County will be notified (via letter) within five working days of the condition. Production will not be allowed until the water level has remained above the limiting value for at least 30 consecutive days. Written permission must be received from the County before production is allowed to commence.
9. Submit annual fees on a time and materials basis to the DPLU to pay for their review of each annual groundwater monitoring report and for their supervision of the Groundwater Monitoring and Mitigation Program as defined in this Plan.

## **GROUNDWATER REPORTING REQUIREMENTS**

A groundwater monitoring report shall be submitted to DPLU within 28 calendar days after the end of the monitoring year. Unless otherwise directed by DPLU, the monitoring year shall be the same as the calendar year. The report shall include the following information:

1. Water level hydrographs and tabulated water level data for each monitoring well.
2. Groundwater and OWD monthly water use for irrigation.
3. Calculation of development-induced groundwater recharge.
4. An assessment of whether groundwater production exceeded development-induced groundwater recharge.
5. Documentation of groundwater drawdown at observation well PV-6. Documentation of threshold-induced curtailment or termination of groundwater production at well PV-4 or it's replacement.
6. Development of a generalized groundwater extraction program for the forthcoming year considering such factors as previously observed irrigation demand by season; prior year calculated groundwater recharge from the project; and estimated increase in groundwater recharge for forthcoming year.

**TABLE A-1**  
**DEVELOPMENT-INDUCED GROUNDWATER RECHARGE**

<b>Lots/Land Use</b>	<b>Number of Lots at Full Development</b>	<b>Development-Induced Groundwater Recharge Rate</b>	<b>Total Groundwater Recharge at Full Development</b>
New Residential	46	0.413	19.00
Lot 48 Public Equestrian Center	1	0.47	0.47
Lot 51 Private Equestrian Center	1	1.8	1.80
Lot 49 Fire Station	1	0.5	0.50
OWD Service Connection and Termination of Groundwater Pumping at Existing Ranch House/Lot 5	1	0.413	0.4
<b>Total Development-Induced Groundwater Recharge</b>			<b>22.2</b>

**TABLE A-2  
WELL INVENTORY**

Well No.	Planned Well Function			
	Groundwater Production	Groundwater Level Monitoring	Off-Property Ownership and Control	Well To Be Destroyed
PV-1 <sup>1</sup>	X			X
PV-2		X		
PV-3				X
PV-4	X			
PV-5			X	
Proposed PV-6		X		
OW-1				X
OW-2				X
OW-3				X
OW-4				X
OW-5				X
OW-6				X
OW-7				X
OW-8				X
OW-9				X
<b>Notes:</b> 1) PV-1 will operate as a production well until the existing residents no longer occupy the existing ranch house on lot 5. At that time, the well shall convert to a groundwater level monitoring well.				

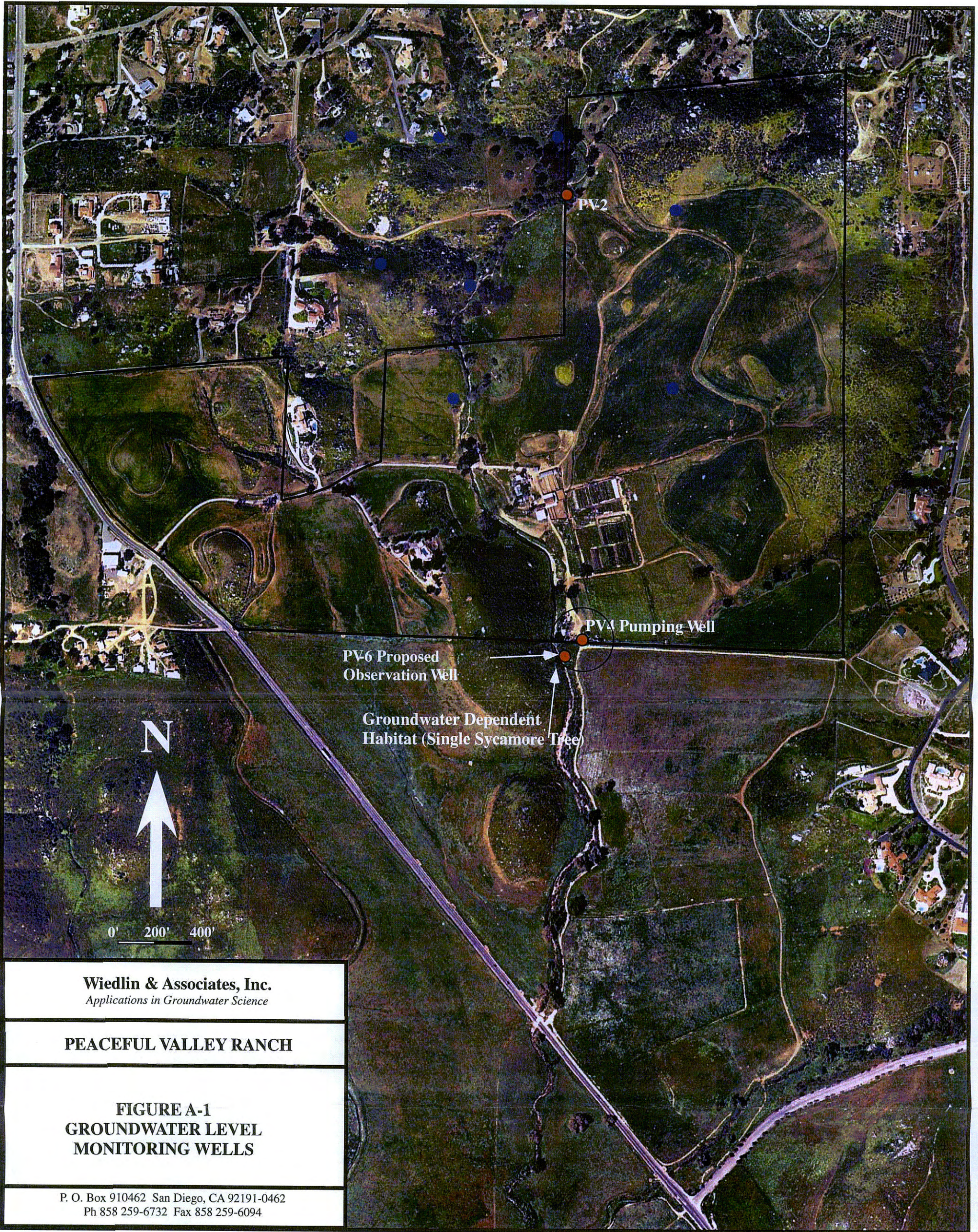
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**ATTACHMENT A-1**  
**California Department of Fish and Game Correspondence to**  
**San Diego County Department of Planning and Land Use**  
**Regarding Access for Well Construction and Groundwater Monitoring**

From: Tim Dillingham [TDilling@dfg.ca.gov]  
Sent: Thursday, June 01, 2006 3:15 PM  
To: Jim.Bennett@sdcounty.ca.gov  
Cc: mwiedlin@san.rr.com  
Subject: Peaceful Valley Ranch Project

The Department is currently working with the project proponent to allow a monitoring well and access to the well. We intend to allow the well and access to it, however the process for completing the easement or license is lengthy and will not likely be completed soon.

This email is to provide evidence that the Department is willing to provide the opportunity and access to the monitoring well, as this will provide an avenue to protect habitat on the Wildlife Area, as well as information which will benefit the operations on the Area. Please call me if you have additional questions at 858 735 7109. Thank you.



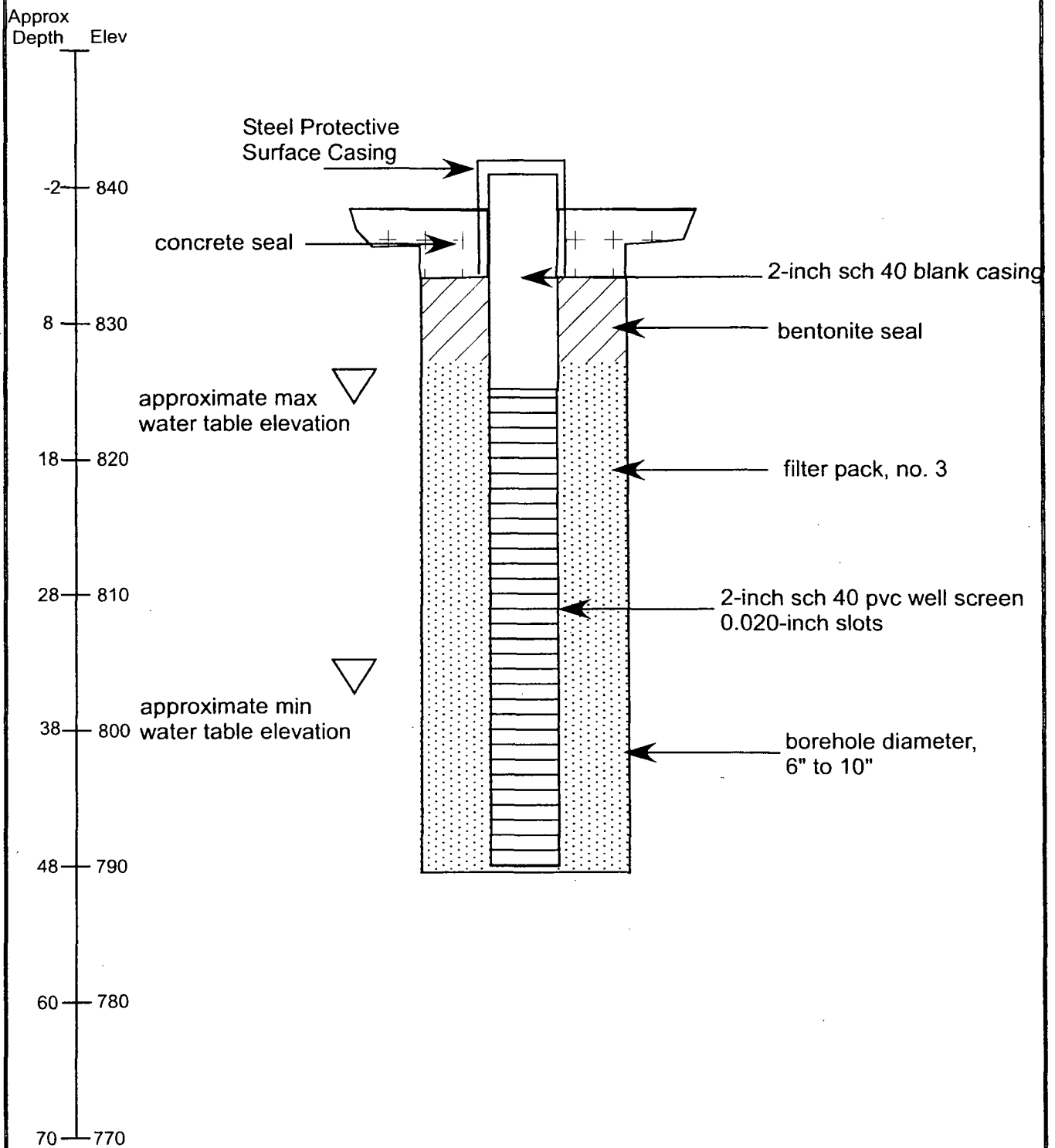
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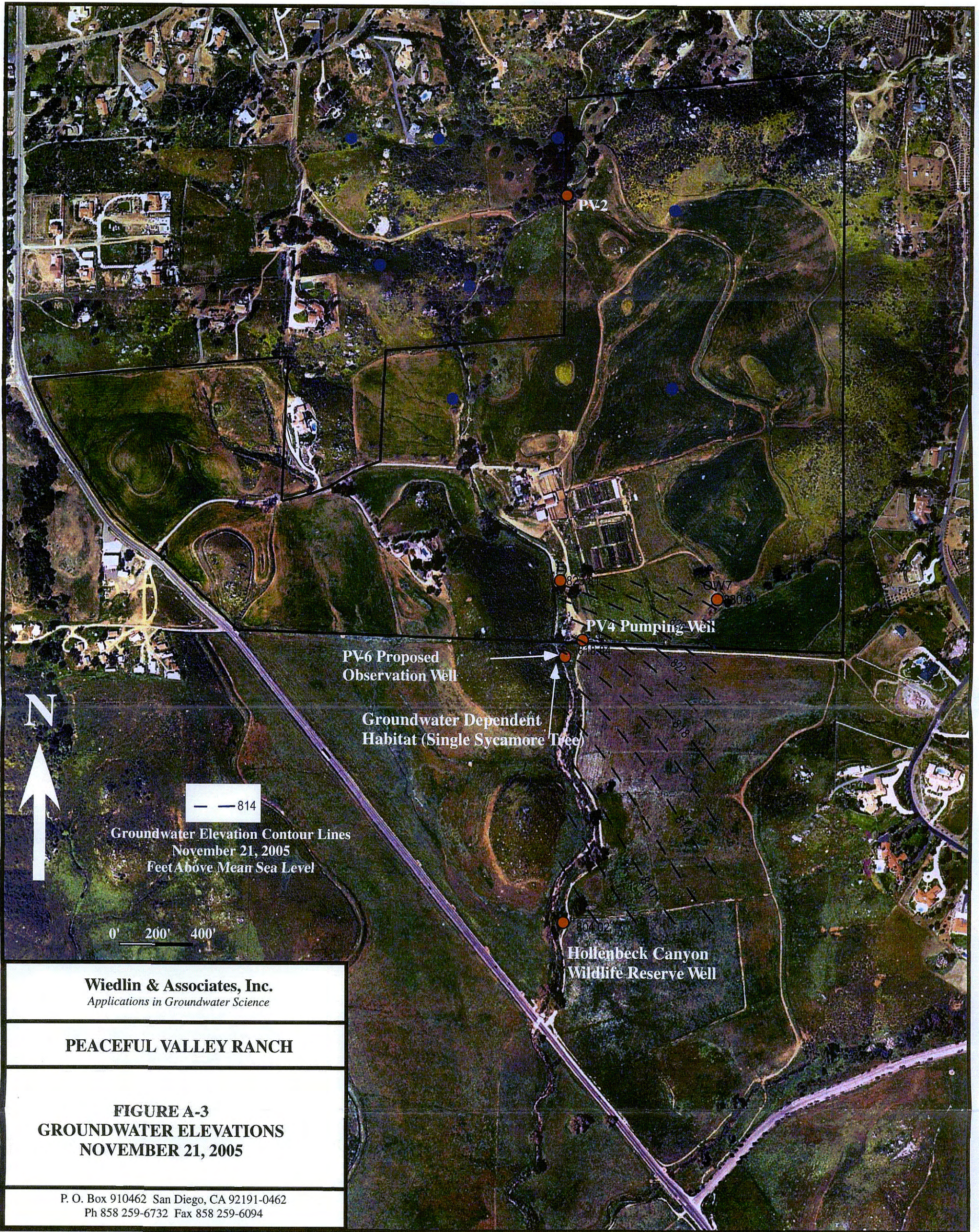
**PEACEFUL VALLEY RANCH**

**FIGURE A-1**  
**GROUNDWATER LEVEL**  
**MONITORING WELLS**

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Ph 858 259-6732 Fax 858 259-6094

**FIGURE A-2**  
**ANTICIPATED WELL CONSTRUCTION DETAILS**  
**PROPOSED OBSERVATION WELL PV-6**





**APPENDIX B**

**PROJECT CORRESPONDENCE WITH DPLU DOCUMENTING  
THE SCOPE OF THE GROUNDWATER STUDY**



P.O. Box 910462  
San Diego, CA 92191-0462  
858.259.6732 · fax 858. 259.6094  
Applications in  
Groundwater Science

September 13, 2004

Department of Planning and Land Use  
Resource Planning  
Attention: Murray Wunderly  
5201 Ruffin Road Suite B  
San Diego, CA 92123-1666

**Subject: Groundwater Recharge Assessment at Peaceful Valley Ranch, Jamul, CA; TM 5341**

Dear Mr. Wunderly:

This letter summarizes our discussions regarding assessment of groundwater resources for the proposed subdivision at Peaceful Valley Ranch Road in Jamul, California. These discussions were conducted in person at your office on Thursday, August 26, 2004 with Dennis Moser, consultant for Peaceful Valley Ranch, in attendance, and on Wednesday, September 1, 2004 by telephone.

The project encompasses 181 acres, 48 new homes, a new fire station to replace the existing fire station located directly across Highway 94 from the site, one existing home, and an equestrian center. Pending completion of annexation of parts of the project into the San Diego County Water Authority service area, the proposed project will be supplied with water by the Otay Water District. Wastewater will be discharged using individual septic leach fields.

For the past five years a three acre organic farm has operated at Peaceful Valley Ranch. During this period groundwater production at the site is estimated at approximately 13 acre-feet per year. The organic farm voluntarily terminated its operations this August.

It is the intent of the project to supplement Otay Water District service with groundwater for the purpose of irrigating a 13-acre equestrian field. The irrigation demand for the equestrian field is estimated between 36 and 72 acre-feet per year depending upon the type of turf selected and the efficiency of the irrigation system. The amount of groundwater produced for the equestrian field shall be limited to the increase in groundwater recharge that is expected to occur as a result of the proposed project.

Our discussion covered three points:

- groundwater recharge and groundwater demand conditions in the watershed,
- increased groundwater recharge induced by the proposed project,
- aquifer testing.

## **Watershed Conditions**

The watershed surrounding Peaceful Valley Ranch is approximately 4,300 acres. There are currently approximately 835 parcels within the watershed according to a SanGis data base search. A count of rooftops within the watershed on a recent aerial photo indicate approximately 560 structures exist within the watershed. This information implies that 560 of 835 parcels have been developed. Otay Water District reports that there are 533 water meters within the watershed boundaries. This implies that greater than 90% of the developed parcels within the watershed receive water from Otay Water District.

Based on Otay Water Districts service boundaries and limitations due to storage tank elevations, there are approximately 47 of the 835 parcels in the watershed that cannot receive imported water. Additionally, there may be other parcels that do not have water service because of the cost of delivering service to a relatively remote parcel or because the owner has elected not to obtain water service.

There are several parcels adjacent to Peaceful Valley Ranch that are within the Otay Water District but do not currently receive water service from Otay Water District as the planned pipeline serving these parcels have not yet been constructed. Currently, owners of these parcels have formed a cooperative group for discussions with the Otay Water District and Peaceful Valley Ranch on feasible ways to implement the planned pipeline construction to serve these parcels.

Groundwater recharge from rainfall was estimated at 0.11 feet per year in the Lee Valley watershed in 1988 by the United States Geological Survey. During this year approximately 19.5 inches of precipitation fell in the watershed and approximately 7 percent reached the water table (USGS, Open File Report 90-592, 1991). The percentage of rainfall that reaches the water table will vary depending upon the amount and intensity of rainfall and the amount of available groundwater storage. Average annual rainfall in Jamul ranges between 15 and 18 inches (San Diego County Precipitation Map, 2004). Assuming 7 percent of 15 inches of rainfall recharges the water table annually within the 4,300 acre watershed, approximately 375 acre-feet of groundwater recharge occurs per year on average.

Groundwater recharge within the watershed is significantly augmented by Otay Water District's water service through infiltration of septic leachate to the water table. Census information from 2000 indicates that an average of 3.5 people reside in each dwelling unit within the census tracts that include the watershed. Assuming water conservation fixtures are in place, the California Department of Water Resources estimates domestic water consumption of 70 gallons per day. Assuming that 90 percent of this water is disposed through septic leachfields, approximately 0.25 acre-feet of water per year is recharged to the water. Huntley and Dansby (Technical Report of Subsurface Wastewater Disposal, San Diego Regional Water Quality Control Board, 1987) report that under soil conditions conducive for successful leachfields, 75 percent to 99 percent of leachate reaches the water table. This estimate of recharge does not include additional contribution from irrigation.

Recharge attributable to imported water is estimated to occur at 533 metered locations within the watershed at a rate of 0.25 acre-feet per year per meter. Therefore, recharge from Otay Water District water service within the watershed is estimated at 133 acre-feet per year. Hence, groundwater recharge from precipitation is augmented nearly 35 percent by recharge from water delivered by Otay Water District. Additionally, recharge from Otay Water District water occurs consistently, independent of rainfall fluctuations. Further, groundwater pumping from these 533 metered locations, either does not occur at all, or is discretionary. As a result, not only is groundwater recharge greater, but groundwater demand in this watershed is lower and less critical than in a comparable watershed that is largely dependent on the groundwater resource.

This analysis indicates that the great majority of parcels within the watershed have Otay Water District service available and that the watershed, for the most part, is not dependent on groundwater resources. Recharge of imported water via leachfield percolation significantly augments the groundwater resources of the watershed.

Based on this assessment, a detailed watershed analysis is not warranted. Rather a hydrogeologic analysis focused on the immediate site and vicinity will provide a more accurate assessment of potential impacts related to groundwater production.

#### **Groundwater Recharge Induced By Project Development**

An increase in groundwater recharge is expected to occur as a result of project development and the delivery of imported water. Estimates of groundwater recharge have been developed for the following recharge processes: infiltration from septic leachfields, irrigation of individual residential parcels, and irrigation of the 13-acre equestrian field. Recharge is also expected to occur from irrigation of home owner association common areas and other equestrian center landscaped areas. The details of these recharge estimates have been discussed with you by telephone and are resubmitted with this letter.

In summary, groundwater recharge induced from 50 new leachfields is expected to be approximately 10.6 acre-feet per year. Groundwater recharge from landscape irrigation of 48 residential parcels is expected to be approximately 14.3 acre-feet per year. Groundwater recharge from irrigation of the 13-acre equestrian field is expected to be approximately 5.4 acre-feet per year. Therefore, an increase in groundwater recharge induced by project development is estimated at 30.3 acre-feet per year. Though additional groundwater resources are available from rainfall and septic recharge from up gradient parcels, it is proposed that groundwater production be limited to the 30.3 acre-feet per year of groundwater recharge induced by the development for the purpose of irrigating the equestrian field. It is understood that this extraction rate is pending the results of the aquifer test and any additional information developed in the forthcoming groundwater report.

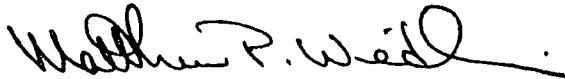
### **Aquifer Testing**

Based on the information presented in our meeting and the regulatory requirements and guidance of CEQA and the County Groundwater Ordinance, DPLU has requested an aquifer test be conducted at the site. The purpose of the test is to provide additional information on the potential for water table drawdown to sensitive habitats and off property wells. In concept the duration of the test may be 48 to 72 hours. An aquifer test work plan will be submitted that will include a vegetation map identifying sensitive habitat, observation well locations, identification of neighboring properties dependent on groundwater, test methods, and criteria for terminating pumping.

The forthcoming groundwater report will include the findings cited herein and the result of the aquifer test. Based on the aquifer test findings, the proposed production rate of 30.3 acre-feet per year may be adjusted.

Provided that this letter accurately summarizes our discussions and agreement on groundwater production, please return a copy of this letter to me with your acknowledgment and signature. If revisions to this document are necessary, please contact me as soon as possible.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew P. Wiedlin", with a long horizontal flourish extending to the right.

Matthew P. Wiedlin  
Hydrogeologist

attachment: recharge calculation worksheet

# RECHARGE ESTIMATES FOR PEACEFUL VALLEY RANCH

SEPTIC RECHARGE	CALCULATION ASSUMPTIONS	CALCULATION DETAILS AND RESULTS
<p>Where:  50 new leachfields including the new firehouse and the equestrian center.  Domestic water use = 70 g per person per day  Rancho famul Estate Survey Indicates Average of 3 people per household  Assume that 10 percent of the water is consumed in the household and not included in the waste flow  Percolation rates at the site are typically 10 to 30 mpt; therefore evaporation from leach field is nil.</p>		<p>Recharge For 1 leachfield = 70 gpd/person * 3.0 people/parcel * 0.9 * 365 d/yr / (325.829 g/acre-ft)    Recharge For 50 Leach Fields = 50 parcels * Recharge Rate for Single Leachfield    <b>Septic Recharge (acre-ft/yr) = 10.6</b></p>
<p><b>IRRIGATION RECHARGE</b>  <b>Polo Field Recharge</b>  <i>Polo Field Irrigation Demand</i>  Where:  Irrigation Area = 12.8 acres  Annual Potential Evapotranspiration = 63 inches  Annual Average Rainfall = 15 to 18 inches  Net Annual Potential Evapotranspiration = 51 inches (4.25 ft); accounting for rainfall in excess of PET demand  <i>Lower Range of Irrigation Demand Estimate</i>  Turf Kc = 0.6 (probably too low)  Irrigation Efficiency = 0.9 (probably optimistic)    <i>Upper Range of Irrigation Demand Estimate</i>  Turf Kc = 0.8 (could be even higher)  Irrigation Efficiency = 0.6    <i>Mean of Irrigation Demand Estimates</i>    <b>Polo Field Recharge (acre-ft/yr) (10% of Demand) = 5.4</b></p>		<p>Polo Field Recharge = 10% of Mean Irrigation Demand    Lower Range of Irrigation Demand for Polo Field = 12.8 acres * 4.25 ft * 0.6 / (0.9) = 36.3    Upper Range of Irrigation Demand for Polo Field = 12.8 acres * 4.25 ft * 0.8 / (0.6) = 72.5    Mean Irrigation Demand = (Lower Range + Upper Range) / 2 = 54.4    Recharge from New Parcel Irrigation = 10% of Estimated Irrigation Demand</p>
<p>Where:  Number of New Residential Parcels: 48  Approximate Parcel Size: 3.5 acres  Approximate Landscaped Area: 1 acre  Net PET = 4.25 feet  Kc = 0.7</p>		<p>Irrigation Demand Per New Residential Parcel (acre-ft/yr) = 3.0  Irrigation Demand For 48 New Residential Parcels (acre-ft/yr) = 144    Recharge From New Parcel Irrigation (acre-ft/yr) (10% of Demand) = 14.4    <b>IRRIGATION RECHARGE = POLO FIELD RECHARGE + NEW PARCEL IRRIGATION = 19.8</b></p>
		<p><b>RECHARGE FROM SEPTIC LEACH FIELDS AND IRRIGATION (acre-ft/yr)</b>      <b>30.3</b></p>

GARY L. PRYOR  
DIRECTOR



# County of San Diego

## DEPARTMENT OF PLANNING AND LAND USE

5201 RUFFIN ROAD, SUITE B, SAN DIEGO, CALIFORNIA 92123-1666  
INFORMATION (858) 694-2960  
TOLL FREE (800) 411-0017

SAN MARCOS OFFICE  
338 VIA VERA CRUZ - SUITE 201  
SAN MARCOS, CA 92069-2620  
(760) 471-0730

EL CAJON OFFICE  
200 EAST MAIN ST - SIXTH FLOOR  
EL CAJON, CA 92020-3912  
(619) 441-4030

September 29, 2004

Matthew P. Wiedlin  
P.O. Box 910462  
San Diego, California 92191-0462

RE: TM 5341 Peaceful Valley Ranch Groundwater Study Meeting Summary

Dear Mr Wiedlin:

I have reviewed the letter you submitted dated September 13, 2004 summarizing our discussions regarding assessment of groundwater resources for the proposed subdivision at Peaceful Valley Ranch in Jamul, California. I believe that your letter accurately summarizes what was generally agreed upon at the meeting (Attached). However, it should be noted that agreement with the concepts proposed in your letter does not constitute approval of any requirements related to groundwater.

We anticipate that a groundwater study will be submitted which will present the information discussed in your letter including the results from aquifer testing yet to be performed. The report must be reviewed and approved by staff. Additionally, an aquifer test workplan should be submitted for approval prior to conducting the aquifer test. This will ensure that the aquifer testing adequately addresses all of the County's concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Murray Wunderly".

Murray Wunderly, Groundwater Geologist  
Regulatory Planning Division

Attachment

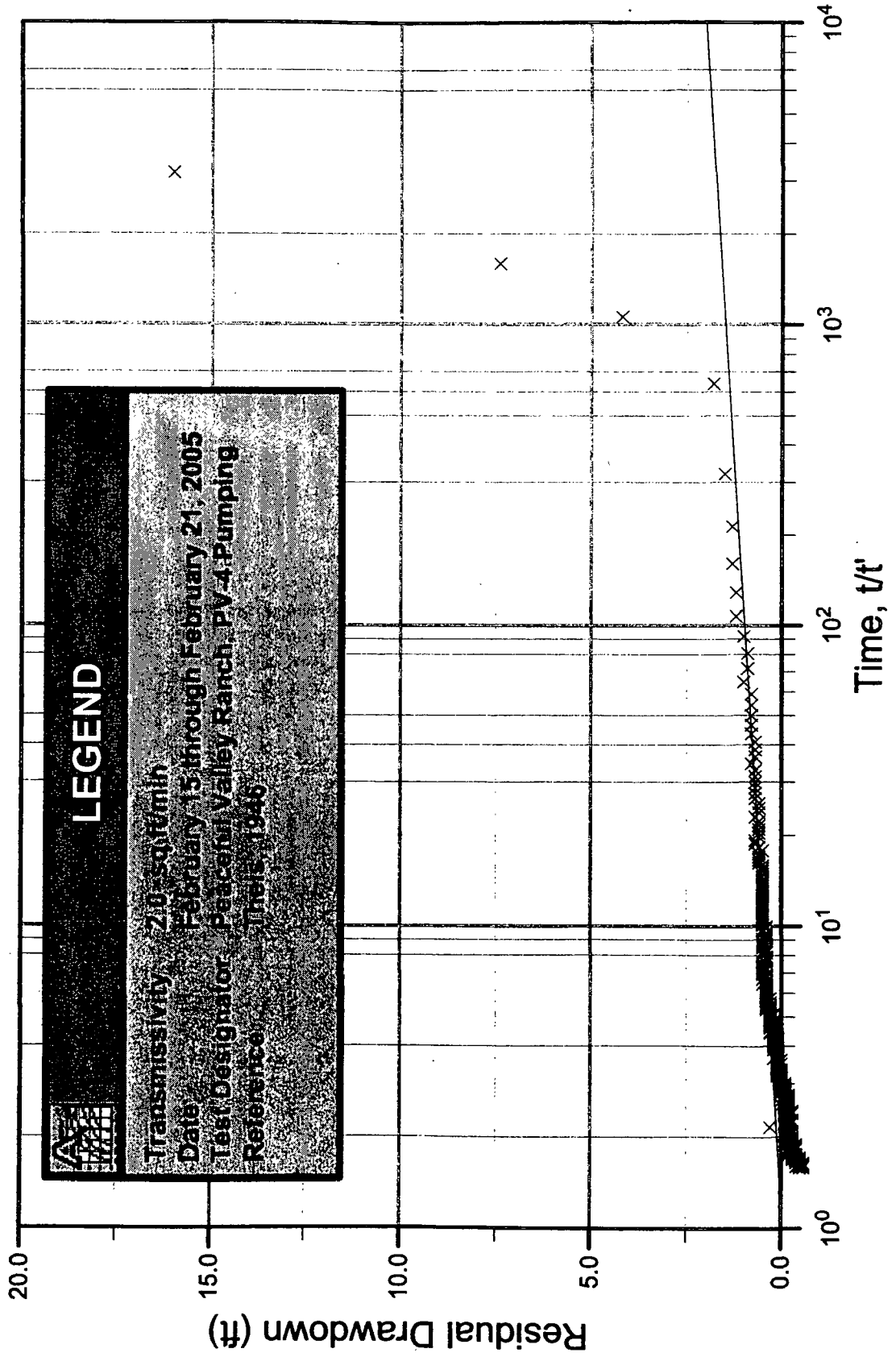
September 13, 2004 Letter from Matthew Wiedlin to Murray Wunderly

cc: Shannon Murphy, Project Manager, Department of Public Planning and Land Use,  
M.S. 0650

**APPENDIX C**  
**AQUIFER TEST DATA AND WELL LOGS**

**Appendix C-1**  
**PV-4 Constant Discharge Aquifer Test**

# PV-4 Theis Recovery Analysis, Q = 41 GPM



**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
138	92.1	2/15/2005 9:59	0	0.0		
139	91.6	2/15/2005 10:00	0.33	0.5		
140	83.1	2/15/2005 10:00	0.67	9.0		
141	78.4	2/15/2005 10:00	1.00	13.7		
142	75.1	2/15/2005 10:01	1.33	17.0		
143	72.6	2/15/2005 10:01	1.67	19.5		
144	70.5	2/15/2005 10:01	2.00	21.6		
145	69.1	2/15/2005 10:02	2.33	23.0		
146	68.1	2/15/2005 10:02	2.67	24.0		
147	67.5	2/15/2005 10:02	3.00	24.6		
148	67.1	2/15/2005 10:03	3.33	25.0		
149	66.9	2/15/2005 10:03	3.67	25.2		
150	66.8	2/15/2005 10:03	4.00	25.3		
151	66.7	2/15/2005 10:04	4.33	25.4		
152	66.6	2/15/2005 10:04	4.67	25.5		
153	66.6	2/15/2005 10:04	5.00	25.5		
154	66.6	2/15/2005 10:05	5.33	25.5		
155	66.6	2/15/2005 10:05	5.67	25.5		
156	66.6	2/15/2005 10:05	6.00	25.5		
157	66.4	2/15/2005 10:06	6.33	25.7		
158	66.3	2/15/2005 10:06	6.67	25.8		
159	66.2	2/15/2005 10:06	7.00	25.9		
160	66.2	2/15/2005 10:07	7.33	25.9		
161	66.1	2/15/2005 10:07	7.67	26.0		
162	65.9	2/15/2005 10:07	8.00	26.2		
163	65.6	2/15/2005 10:08	8.33	26.5		
164	65.3	2/15/2005 10:08	8.67	26.8		
165	65.3	2/15/2005 10:08	9.00	26.7		
166	65.1	2/15/2005 10:09	9.33	26.9		
167	65.1	2/15/2005 10:09	9.67	26.9		
168	65.0	2/15/2005 10:09	10.00	27.0		
169	64.9	2/15/2005 10:10	10.33	27.1		
170	64.8	2/15/2005 10:10	10.67	27.2		
171	64.9	2/15/2005 10:10	11.00	27.1		
172	64.8	2/15/2005 10:11	11.33	27.2		
173	64.8	2/15/2005 10:11	11.67	27.2		
174	64.8	2/15/2005 10:11	12.00	27.2		
175	64.7	2/15/2005 10:12	12.33	27.3		
176	64.6	2/15/2005 10:12	12.67	27.4		
177	64.6	2/15/2005 10:12	13.00	27.4		
178	64.6	2/15/2005 10:13	13.33	27.4		
179	64.8	2/15/2005 10:13	13.67	27.2		
180	64.6	2/15/2005 10:13	14.00	27.4		
181	64.6	2/15/2005 10:14	14.33	27.4		
182	64.6	2/15/2005 10:14	14.67	27.4		
183	64.6	2/15/2005 10:14	15.00	27.4		
184	64.6	2/15/2005 10:15	15.33	27.4		
185	64.6	2/15/2005 10:15	15.67	27.4		
186	64.6	2/15/2005 10:15	16.00	27.4		
187	64.6	2/15/2005 10:16	16.33	27.4		
188	64.6	2/15/2005 10:16	16.67	27.4		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
189	64.6	2/15/2005 10:16	17.00	27.4		
190	64.6	2/15/2005 10:17	17.33	27.4		
191	64.6	2/15/2005 10:17	17.67	27.4		
192	64.7	2/15/2005 10:17	18.00	27.3		
193	64.6	2/15/2005 10:18	18.33	27.4		
194	64.6	2/15/2005 10:18	18.67	27.4		
195	64.7	2/15/2005 10:18	19.00	27.3		
196	64.7	2/15/2005 10:19	19.33	27.3		
197	64.6	2/15/2005 10:19	19.67	27.4		
198	64.6	2/15/2005 10:19	20.00	27.4		
199	64.6	2/15/2005 10:20	20.33	27.4		
200	64.7	2/15/2005 10:20	20.67	27.3		
201	64.8	2/15/2005 10:20	21.00	27.2		
202	65.0	2/15/2005 10:21	21.33	27.0		
203	65.2	2/15/2005 10:21	21.67	26.8		
204	65.2	2/15/2005 10:21	22.00	26.8		
205	64.9	2/15/2005 10:22	22.33	27.1		
206	64.8	2/15/2005 10:22	22.67	27.2		
207	64.6	2/15/2005 10:22	23.00	27.4		
208	64.5	2/15/2005 10:23	23.33	27.5		
209	64.4	2/15/2005 10:23	23.67	27.6		
210	64.4	2/15/2005 10:23	24.00	27.6		
211	64.4	2/15/2005 10:24	24.33	27.6		
212	64.3	2/15/2005 10:24	24.67	27.7		
213	64.2	2/15/2005 10:24	25.00	27.8		
214	64.2	2/15/2005 10:25	25.33	27.8		
215	64.1	2/15/2005 10:25	25.67	27.9		
216	64.1	2/15/2005 10:25	26.00	27.9		
217	64.1	2/15/2005 10:26	26.33	27.9		
218	64.1	2/15/2005 10:26	26.67	27.9		
219	64.1	2/15/2005 10:26	27.00	27.9		
220	64.1	2/15/2005 10:27	27.33	27.9		
221	64.1	2/15/2005 10:27	27.67	27.9		
222	64.1	2/15/2005 10:27	28.00	27.9		
223	64.2	2/15/2005 10:28	28.33	27.8		
224	64.2	2/15/2005 10:28	28.67	27.8		
225	64.2	2/15/2005 10:28	29.00	27.8		
226	64.2	2/15/2005 10:29	29.33	27.8		
227	64.1	2/15/2005 10:29	29.67	27.9		
228	64.1	2/15/2005 10:29	30.00	27.9		
229	64.1	2/15/2005 10:30	30.33	27.9		
230	64.1	2/15/2005 10:30	30.67	27.9		
231	64.1	2/15/2005 10:30	31.00	27.9		
232	64.1	2/15/2005 10:31	31.33	27.9		
233	64.1	2/15/2005 10:31	31.67	27.9		
234	64.1	2/15/2005 10:31	32.00	27.9		
235	64.1	2/15/2005 10:32	32.33	27.9		
236	64.0	2/15/2005 10:32	32.67	28.0		
237	64.0	2/15/2005 10:32	33.00	28.0		
238	64.0	2/15/2005 10:33	33.33	28.0		
239	64.0	2/15/2005 10:33	33.67	28.0		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
240	64.0	2/15/2005 10:33	34.00	28.0		
241	63.9	2/15/2005 10:34	34.33	28.1		
242	64.0	2/15/2005 10:34	34.67	28.0		
243	64.0	2/15/2005 10:34	35.00	28.0		
244	64.0	2/15/2005 10:35	35.33	28.0		
245	64.0	2/15/2005 10:35	35.67	28.0		
246	64.1	2/15/2005 10:35	36.00	27.9		
247	64.1	2/15/2005 10:36	36.33	27.9		
248	64.1	2/15/2005 10:36	36.67	27.9		
249	64.1	2/15/2005 10:36	37.00	27.9		
250	64.1	2/15/2005 10:37	37.33	27.9		
251	64.1	2/15/2005 10:37	37.67	27.9		
252	64.1	2/15/2005 10:37	38.00	27.9		
253	64.1	2/15/2005 10:38	38.33	27.9		
254	64.1	2/15/2005 10:38	38.67	27.9		
255	64.1	2/15/2005 10:38	39.00	27.9		
256	64.1	2/15/2005 10:39	39.33	27.9		
257	64.1	2/15/2005 10:39	39.67	27.9		
258	64.1	2/15/2005 10:39	40.00	27.9		
259	64.1	2/15/2005 10:40	40.33	27.9		
260	64.1	2/15/2005 10:40	40.67	27.9		
261	64.1	2/15/2005 10:40	41.00	27.9		
262	64.1	2/15/2005 10:41	41.33	27.9		
263	64.1	2/15/2005 10:41	41.67	27.9		
264	64.1	2/15/2005 10:41	42.00	27.9		
265	64.1	2/15/2005 10:42	42.33	27.9		
266	64.1	2/15/2005 10:42	42.67	27.9		
267	64.1	2/15/2005 10:42	43.00	27.9		
268	64.1	2/15/2005 10:43	43.33	27.9		
269	64.1	2/15/2005 10:43	43.67	27.9		
270	64.0	2/15/2005 10:43	44.00	28.0		
271	64.1	2/15/2005 10:44	44.33	27.9		
272	64.1	2/15/2005 10:44	44.67	27.9		
273	64.1	2/15/2005 10:44	45.00	27.9		
274	64.1	2/15/2005 10:45	45.33	27.9		
275	64.1	2/15/2005 10:45	45.67	27.9		
276	64.1	2/15/2005 10:45	46.00	27.9		
277	64.1	2/15/2005 10:46	46.33	27.9		
278	64.1	2/15/2005 10:46	46.67	27.9		
279	64.1	2/15/2005 10:46	47.00	27.9		
280	64.1	2/15/2005 10:47	47.33	27.9		
281	64.1	2/15/2005 10:47	47.67	27.9		
282	64.1	2/15/2005 10:47	48.00	27.9		
283	64.1	2/15/2005 10:48	48.33	27.9		
284	64.1	2/15/2005 10:48	48.67	27.9		
285	64.1	2/15/2005 10:48	49.00	27.9		
286	64.1	2/15/2005 10:49	49.33	27.9		
287	64.2	2/15/2005 10:49	49.67	27.8		
288	64.1	2/15/2005 10:49	50.00	27.9		
289	64.1	2/15/2005 10:50	50.33	27.9		
290	64.1	2/15/2005 10:50	50.67	27.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
291	64.1	2/15/2005 10:50	51.00	27.9		
292	64.1	2/15/2005 10:51	51.33	27.9		
293	64.1	2/15/2005 10:51	51.67	27.9		
294	64.1	2/15/2005 10:51	52.00	27.9		
295	64.2	2/15/2005 10:52	52.33	27.8		
296	64.1	2/15/2005 10:52	52.67	27.9		
297	63.9	2/15/2005 10:52	53.00	28.1		
298	63.8	2/15/2005 10:53	53.33	28.2		
299	63.7	2/15/2005 10:53	53.67	28.3		
300	63.6	2/15/2005 10:53	54.00	28.4		
301	63.5	2/15/2005 10:54	54.33	28.5		
302	63.5	2/15/2005 10:54	54.67	28.5		
303	63.5	2/15/2005 10:54	55.00	28.5		
304	63.4	2/15/2005 10:55	55.33	28.6		
305	63.4	2/15/2005 10:55	55.67	28.6		
306	63.4	2/15/2005 10:55	56.00	28.6		
307	63.4	2/15/2005 10:56	56.33	28.6		
308	63.4	2/15/2005 10:56	56.67	28.6		
309	63.3	2/15/2005 10:56	57.00	28.7		
310	63.4	2/15/2005 10:57	57.33	28.6		
311	63.4	2/15/2005 10:57	57.67	28.6		
312	63.4	2/15/2005 10:57	58.00	28.6		
313	63.3	2/15/2005 10:58	58.33	28.7		
314	63.3	2/15/2005 10:58	58.67	28.7		
315	63.3	2/15/2005 10:58	59.00	28.7		
316	63.3	2/15/2005 10:59	59.33	28.7		
317	63.3	2/15/2005 10:59	59.67	28.7		
318	63.4	2/15/2005 10:59	60.00	28.6		
319	63.3	2/15/2005 11:00	60.33	28.7		
320	63.3	2/15/2005 11:00	60.67	28.7		
321	63.3	2/15/2005 11:00	61.00	28.7		
322	63.3	2/15/2005 11:01	61.33	28.7		
323	63.3	2/15/2005 11:01	61.67	28.7		
324	63.4	2/15/2005 11:01	62.00	28.6		
325	63.3	2/15/2005 11:02	62.33	28.7		
326	63.3	2/15/2005 11:02	62.67	28.7		
327	63.3	2/15/2005 11:02	63.00	28.7		
328	63.3	2/15/2005 11:03	63.33	28.7		
329	63.3	2/15/2005 11:03	63.67	28.7		
330	63.4	2/15/2005 11:03	64.00	28.6		
331	63.4	2/15/2005 11:04	64.33	28.6		
332	63.4	2/15/2005 11:04	64.67	28.6		
333	63.4	2/15/2005 11:04	65.00	28.6		
334	63.4	2/15/2005 11:05	65.33	28.6		
335	63.4	2/15/2005 11:05	65.67	28.6		
336	63.3	2/15/2005 11:05	66.00	28.7		
337	63.3	2/15/2005 11:06	66.33	28.7		
338	63.3	2/15/2005 11:06	66.67	28.7		
339	63.3	2/15/2005 11:06	67.00	28.7		
340	63.2	2/15/2005 11:07	67.33	28.8		
341	63.3	2/15/2005 11:07	67.67	28.7		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
342	63.3	2/15/2005 11:07	68.00	28.7		
343	63.2	2/15/2005 11:08	68.33	28.8		
344	63.3	2/15/2005 11:08	68.67	28.7		
345	63.2	2/15/2005 11:08	69.00	28.8		
346	63.3	2/15/2005 11:09	69.33	28.7		
347	63.2	2/15/2005 11:09	69.67	28.8		
348	63.3	2/15/2005 11:09	70.00	28.7		
349	63.2	2/15/2005 11:10	70.33	28.8		
350	63.2	2/15/2005 11:10	70.67	28.8		
351	63.2	2/15/2005 11:10	71.00	28.8		
352	63.3	2/15/2005 11:11	71.33	28.7		
353	63.3	2/15/2005 11:11	71.67	28.7		
354	63.3	2/15/2005 11:11	72.00	28.7		
355	63.3	2/15/2005 11:12	72.33	28.7		
356	63.3	2/15/2005 11:12	72.67	28.7		
357	63.2	2/15/2005 11:12	73.00	28.8		
358	63.2	2/15/2005 11:13	73.33	28.8		
359	63.2	2/15/2005 11:13	73.67	28.8		
360	63.2	2/15/2005 11:13	74.00	28.8		
361	63.2	2/15/2005 11:14	74.33	28.8		
362	63.2	2/15/2005 11:14	74.67	28.8		
363	63.3	2/15/2005 11:14	75.00	28.7		
364	63.2	2/15/2005 11:15	75.33	28.8		
365	63.2	2/15/2005 11:15	75.67	28.8		
366	63.1	2/15/2005 11:15	76.00	28.9		
367	63.2	2/15/2005 11:16	76.33	28.8		
368	63.2	2/15/2005 11:16	76.67	28.8		
369	63.2	2/15/2005 11:16	77.00	28.8		
370	63.2	2/15/2005 11:17	77.33	28.8		
371	63.2	2/15/2005 11:17	77.67	28.8		
372	63.2	2/15/2005 11:17	78.00	28.8		
373	63.2	2/15/2005 11:18	78.33	28.8		
374	63.3	2/15/2005 11:18	78.67	28.7		
375	63.2	2/15/2005 11:18	79.00	28.8		
376	63.2	2/15/2005 11:19	79.33	28.8		
377	63.2	2/15/2005 11:19	79.67	28.8		
378	63.2	2/15/2005 11:19	80.00	28.8		
379	63.2	2/15/2005 11:20	80.33	28.8		
380	63.2	2/15/2005 11:20	80.67	28.8		
381	63.2	2/15/2005 11:20	81.00	28.8		
382	63.2	2/15/2005 11:21	81.33	28.8		
383	63.1	2/15/2005 11:21	81.67	28.9		
384	63.2	2/15/2005 11:21	82.00	28.8		
385	63.2	2/15/2005 11:22	82.33	28.8		
386	63.2	2/15/2005 11:22	82.67	28.8		
387	63.2	2/15/2005 11:22	83.00	28.8		
388	62.9	2/15/2005 11:23	83.33	29.1		
389	62.7	2/15/2005 11:23	83.67	29.3		
390	62.6	2/15/2005 11:23	84.00	29.4		
391	62.5	2/15/2005 11:24	85.00	29.5		
392	62.1	2/15/2005 11:25	86.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
393	62.0	2/15/2005 11:26	87.00	30.0		
394	61.9	2/15/2005 11:27	88.00	30.1		
395	62.4	2/15/2005 11:28	89.00	29.6		
396	62.7	2/15/2005 11:29	90.00	29.3		
397	62.9	2/15/2005 11:30	91.00	29.1		
398	63.0	2/15/2005 11:31	92.00	29.0		
399	63.1	2/15/2005 11:32	93.00	28.9		
400	63.2	2/15/2005 11:33	94.00	28.8		
401	63.2	2/15/2005 11:34	95.00	28.8		
402	63.3	2/15/2005 11:35	96.00	28.7		
403	63.2	2/15/2005 11:36	97.00	28.8		
404	63.2	2/15/2005 11:37	98.00	28.8		
405	63.3	2/15/2005 11:38	99.00	28.7		
406	63.3	2/15/2005 11:39	100.00	28.7		
407	63.3	2/15/2005 11:40	101.00	28.7		
408	63.4	2/15/2005 11:41	102.00	28.6		
409	63.3	2/15/2005 11:42	103.00	28.7		
410	63.3	2/15/2005 11:43	104.00	28.7		
411	63.4	2/15/2005 11:44	105.00	28.6		
412	63.3	2/15/2005 11:45	106.00	28.7		
413	63.3	2/15/2005 11:46	107.00	28.7		
414	63.7	2/15/2005 11:47	108.00	28.3		
415	63.9	2/15/2005 11:48	109.00	28.1		
416	64.0	2/15/2005 11:49	110.00	28.0		
417	63.1	2/15/2005 11:50	111.00	28.9		
418	62.7	2/15/2005 11:51	112.00	29.3		
419	62.5	2/15/2005 11:52	113.00	29.5		
420	62.5	2/15/2005 11:53	114.00	29.6		
421	62.3	2/15/2005 11:54	115.00	29.8		
422	62.4	2/15/2005 11:55	116.00	29.7		
423	62.4	2/15/2005 11:56	117.00	29.7		
424	62.3	2/15/2005 11:57	118.00	29.8		
425	62.2	2/15/2005 11:58	119.00	29.9		
426	62.2	2/15/2005 11:59	120.00	29.9		
427	62.3	2/15/2005 12:00	121.00	29.8		
428	62.3	2/15/2005 12:01	122.00	29.8		
429	62.3	2/15/2005 12:02	123.00	29.8		
430	62.3	2/15/2005 12:03	124.00	29.8		
431	62.3	2/15/2005 12:04	125.00	29.8		
432	62.3	2/15/2005 12:05	126.00	29.8		
433	62.4	2/15/2005 12:06	127.00	29.7		
434	62.3	2/15/2005 12:07	128.00	29.8		
435	62.3	2/15/2005 12:08	129.00	29.8		
436	62.3	2/15/2005 12:09	130.00	29.8		
437	62.2	2/15/2005 12:10	131.00	29.9		
438	62.2	2/15/2005 12:11	132.00	29.9		
439	62.2	2/15/2005 12:12	133.00	29.9		
440	62.2	2/15/2005 12:13	134.00	29.9		
441	62.2	2/15/2005 12:14	135.00	29.9		
442	62.2	2/15/2005 12:15	136.00	29.9		
443	62.1	2/15/2005 12:16	137.00	30.0		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
444	62.1	2/15/2005 12:17	138.00	30.0		
445	62.1	2/15/2005 12:18	139.00	30.0		
446	62.1	2/15/2005 12:19	140.00	30.0		
447	62.3	2/15/2005 12:20	141.00	29.8		
448	62.1	2/15/2005 12:21	142.00	30.0		
449	62.1	2/15/2005 12:22	143.00	30.0		
450	62.1	2/15/2005 12:23	144.00	30.0		
451	62.1	2/15/2005 12:24	145.00	30.0		
452	62.2	2/15/2005 12:25	146.00	29.9		
453	62.3	2/15/2005 12:26	147.00	29.8		
454	62.3	2/15/2005 12:27	148.00	29.8		
455	62.3	2/15/2005 12:28	149.00	29.8		
456	62.3	2/15/2005 12:29	150.00	29.8		
457	62.3	2/15/2005 12:30	151.00	29.8		
458	62.3	2/15/2005 12:31	152.00	29.8		
459	62.2	2/15/2005 12:32	153.00	29.9		
460	62.2	2/15/2005 12:33	154.00	29.9		
461	62.1	2/15/2005 12:34	155.00	30.0		
462	62.1	2/15/2005 12:35	156.00	30.0		
463	62.1	2/15/2005 12:36	157.00	30.0		
464	62.1	2/15/2005 12:37	158.00	30.0		
465	62.0	2/15/2005 12:38	159.00	30.1		
466	62.1	2/15/2005 12:39	160.00	30.0		
467	62.1	2/15/2005 12:40	161.00	30.0		
468	62.1	2/15/2005 12:41	162.00	30.0		
469	62.1	2/15/2005 12:42	163.00	30.0		
470	62.1	2/15/2005 12:43	164.00	30.0		
471	62.1	2/15/2005 12:44	165.00	30.0		
472	62.1	2/15/2005 12:45	166.00	30.0		
473	62.2	2/15/2005 12:46	167.00	29.9		
474	62.2	2/15/2005 12:47	168.00	29.9		
475	62.1	2/15/2005 12:48	169.00	30.0		
476	62.1	2/15/2005 12:49	170.00	30.0		
477	62.1	2/15/2005 12:50	171.00	30.0		
478	62.2	2/15/2005 12:51	172.00	29.9		
479	62.1	2/15/2005 12:52	173.00	30.0		
480	62.0	2/15/2005 12:53	174.00	30.1		
481	62.0	2/15/2005 12:54	175.00	30.1		
482	62.0	2/15/2005 12:55	176.00	30.1		
483	62.1	2/15/2005 12:56	177.00	30.0		
484	62.0	2/15/2005 12:57	178.00	30.1		
485	62.0	2/15/2005 12:58	179.00	30.1		
486	62.0	2/15/2005 12:59	180.00	30.1		
487	62.0	2/15/2005 13:00	181.00	30.1		
488	62.1	2/15/2005 13:01	182.00	30.0		
489	62.0	2/15/2005 13:02	183.00	30.1		
490	62.0	2/15/2005 13:03	184.00	30.1		
491	62.0	2/15/2005 13:04	185.00	30.1		
492	62.0	2/15/2005 13:05	186.00	30.1		
493	62.1	2/15/2005 13:06	187.00	30.0		
494	62.1	2/15/2005 13:07	188.00	30.0		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
495	62.1	2/15/2005 13:08	189.00	30.0		
496	62.0	2/15/2005 13:09	190.00	30.1		
497	62.1	2/15/2005 13:10	191.00	30.0		
498	62.0	2/15/2005 13:11	192.00	30.1		
499	62.0	2/15/2005 13:12	193.00	30.1		
500	62.0	2/15/2005 13:13	194.00	30.1		
501	62.0	2/15/2005 13:14	195.00	30.1		
502	62.0	2/15/2005 13:15	196.00	30.1		
503	62.1	2/15/2005 13:16	197.00	30.0		
504	62.0	2/15/2005 13:17	198.00	30.1		
505	62.0	2/15/2005 13:18	199.00	30.1		
506	62.0	2/15/2005 13:19	200.00	30.1		
507	62.1	2/15/2005 13:20	201.00	30.0		
508	62.0	2/15/2005 13:21	202.00	30.1		
509	62.1	2/15/2005 13:22	203.00	30.0		
510	62.0	2/15/2005 13:23	204.00	30.1		
511	62.0	2/15/2005 13:24	205.00	30.1		
512	62.1	2/15/2005 13:25	206.00	30.0		
513	62.1	2/15/2005 13:26	207.00	30.0		
514	62.1	2/15/2005 13:27	208.00	30.0		
515	62.0	2/15/2005 13:28	209.00	30.1		
516	62.0	2/15/2005 13:29	210.00	30.1		
517	62.0	2/15/2005 13:30	211.00	30.1		
518	62.1	2/15/2005 13:31	212.00	30.0		
519	62.0	2/15/2005 13:32	213.00	30.1		
520	62.0	2/15/2005 13:33	214.00	30.1		
521	62.0	2/15/2005 13:34	215.00	30.1		
522	62.0	2/15/2005 13:35	216.00	30.1		
523	62.0	2/15/2005 13:36	217.00	30.1		
524	62.1	2/15/2005 13:37	218.00	30.0		
525	61.9	2/15/2005 13:38	219.00	30.2		
526	62.0	2/15/2005 13:39	220.00	30.1		
527	62.0	2/15/2005 13:40	221.00	30.1		
528	62.0	2/15/2005 13:41	222.00	30.1		
529	62.0	2/15/2005 13:42	223.00	30.1		
530	62.0	2/15/2005 13:43	224.00	30.1		
531	62.0	2/15/2005 13:44	225.00	30.1		
532	62.0	2/15/2005 13:45	226.00	30.1		
533	62.0	2/15/2005 13:46	227.00	30.1		
534	62.1	2/15/2005 13:47	228.00	30.0		
535	62.0	2/15/2005 13:48	229.00	30.1		
536	62.0	2/15/2005 13:49	230.00	30.1		
537	62.0	2/15/2005 13:50	231.00	30.1		
538	62.0	2/15/2005 13:51	232.00	30.1		
539	62.0	2/15/2005 13:52	233.00	30.1		
540	62.0	2/15/2005 13:53	234.00	30.0		
541	62.1	2/15/2005 13:54	235.00	29.9		
542	62.0	2/15/2005 13:55	236.00	30.0		
543	62.1	2/15/2005 13:56	237.00	29.9		
544	62.1	2/15/2005 13:57	238.00	29.9		
545	62.1	2/15/2005 13:58	239.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
546	62.0	2/15/2005 13:59	240.00	30.0		
547	62.0	2/15/2005 14:00	241.00	30.0		
548	62.0	2/15/2005 14:01	242.00	30.0		
549	62.0	2/15/2005 14:02	243.00	30.0		
550	62.1	2/15/2005 14:03	244.00	29.9		
551	62.0	2/15/2005 14:04	245.00	30.0		
552	62.1	2/15/2005 14:05	246.00	29.9		
553	62.0	2/15/2005 14:06	247.00	30.0		
554	62.1	2/15/2005 14:07	248.00	29.9		
555	62.0	2/15/2005 14:08	249.00	30.1		
556	62.1	2/15/2005 14:09	250.00	30.0		
557	62.1	2/15/2005 14:10	251.00	30.0		
558	62.0	2/15/2005 14:11	252.00	30.1		
559	62.0	2/15/2005 14:12	253.00	30.1		
560	62.0	2/15/2005 14:13	254.00	30.1		
561	62.0	2/15/2005 14:14	255.00	30.1		
562	61.9	2/15/2005 14:15	256.00	30.2		
563	62.0	2/15/2005 14:16	257.00	30.1		
564	61.9	2/15/2005 14:17	258.00	30.2		
565	62.0	2/15/2005 14:18	259.00	30.1		
566	62.0	2/15/2005 14:19	260.00	30.1		
567	62.0	2/15/2005 14:20	261.00	30.1		
568	62.0	2/15/2005 14:21	262.00	30.1		
569	62.0	2/15/2005 14:22	263.00	30.1		
570	61.9	2/15/2005 14:23	264.00	30.1		
571	61.8	2/15/2005 14:24	265.00	30.2		
572	62.0	2/15/2005 14:25	266.00	30.0		
573	61.9	2/15/2005 14:26	267.00	30.1		
574	62.0	2/15/2005 14:27	268.00	30.0		
575	62.0	2/15/2005 14:28	269.00	30.0		
576	62.0	2/15/2005 14:29	270.00	30.0		
577	62.0	2/15/2005 14:30	271.00	30.0		
578	62.0	2/15/2005 14:31	272.00	30.0		
579	61.9	2/15/2005 14:32	273.00	30.1		
580	62.0	2/15/2005 14:33	274.00	30.0		
581	61.9	2/15/2005 14:34	275.00	30.1		
582	62.0	2/15/2005 14:35	276.00	30.0		
583	62.0	2/15/2005 14:36	277.00	30.0		
584	62.0	2/15/2005 14:37	278.00	30.0		
585	62.0	2/15/2005 14:38	279.00	30.1		
586	62.1	2/15/2005 14:39	280.00	30.0		
587	62.1	2/15/2005 14:40	281.00	30.0		
588	62.0	2/15/2005 14:41	282.00	30.1		
589	62.0	2/15/2005 14:42	283.00	30.1		
590	62.1	2/15/2005 14:43	284.00	30.0		
591	62.0	2/15/2005 14:44	285.00	30.1		
592	62.0	2/15/2005 14:45	286.00	30.1		
593	62.1	2/15/2005 14:46	287.00	30.0		
594	62.1	2/15/2005 14:47	288.00	30.0		
595	62.1	2/15/2005 14:48	289.00	30.0		
596	62.0	2/15/2005 14:49	290.00	30.1		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
597	62.0	2/15/2005 14:50	291.00	30.1		
598	62.0	2/15/2005 14:51	292.00	30.1		
599	62.0	2/15/2005 14:52	293.00	30.1		
600	62.0	2/15/2005 14:53	294.00	30.1		
601	62.0	2/15/2005 14:54	295.00	30.1		
602	62.0	2/15/2005 14:55	296.00	30.1		
603	62.0	2/15/2005 14:56	297.00	30.1		
604	62.0	2/15/2005 14:57	298.00	30.1		
605	62.0	2/15/2005 14:58	299.00	30.1		
606	62.0	2/15/2005 14:59	300.00	30.1		
607	62.0	2/15/2005 15:00	301.00	30.1		
608	62.0	2/15/2005 15:01	302.00	30.1		
609	62.0	2/15/2005 15:02	303.00	30.1		
610	62.0	2/15/2005 15:03	304.00	30.1		
611	62.0	2/15/2005 15:04	305.00	30.1		
612	62.0	2/15/2005 15:05	306.00	30.1		
613	62.0	2/15/2005 15:06	307.00	30.1		
614	62.0	2/15/2005 15:07	308.00	30.1		
615	62.1	2/15/2005 15:08	309.00	29.9		
616	62.1	2/15/2005 15:09	310.00	29.9		
617	62.1	2/15/2005 15:10	311.00	29.9		
618	62.0	2/15/2005 15:11	312.00	30.0		
619	62.0	2/15/2005 15:12	313.00	30.0		
620	62.1	2/15/2005 15:13	314.00	29.9		
621	62.1	2/15/2005 15:14	315.00	29.9		
622	62.0	2/15/2005 15:15	316.00	30.0		
623	62.1	2/15/2005 15:16	317.00	29.9		
624	62.1	2/15/2005 15:17	318.00	29.9		
625	62.0	2/15/2005 15:18	319.00	30.0		
626	62.0	2/15/2005 15:19	320.00	30.0		
627	62.1	2/15/2005 15:20	321.00	29.9		
628	62.1	2/15/2005 15:21	322.00	29.9		
629	62.0	2/15/2005 15:22	323.00	30.0		
630	62.0	2/15/2005 15:23	324.00	30.0		
631	62.0	2/15/2005 15:24	325.00	30.0		
632	62.1	2/15/2005 15:25	326.00	29.9		
633	62.1	2/15/2005 15:26	327.00	29.9		
634	62.1	2/15/2005 15:27	328.00	29.9		
635	62.0	2/15/2005 15:28	329.00	30.0		
636	62.1	2/15/2005 15:29	330.00	29.9		
637	62.1	2/15/2005 15:30	331.00	29.9		
638	62.1	2/15/2005 15:31	332.00	29.9		
639	62.0	2/15/2005 15:32	333.00	30.0		
640	62.0	2/15/2005 15:33	334.00	30.0		
641	62.0	2/15/2005 15:34	335.00	30.0		
642	62.0	2/15/2005 15:35	336.00	30.0		
643	62.0	2/15/2005 15:36	337.00	30.0		
644	62.0	2/15/2005 15:37	338.00	30.0		
645	62.0	2/15/2005 15:38	339.00	30.1		
646	62.0	2/15/2005 15:39	340.00	30.1		
647	62.1	2/15/2005 15:40	341.00	30.0		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
648	62.1	2/15/2005 15:41	342.00	30.0		
649	62.0	2/15/2005 15:42	343.00	30.1		
650	62.1	2/15/2005 15:43	344.00	30.0		
651	62.1	2/15/2005 15:44	345.00	30.0		
652	62.5	2/15/2005 15:45	346.00	29.6		
653	62.7	2/15/2005 15:46	347.00	29.4		
654	62.8	2/15/2005 15:47	348.00	29.3		
655	63.0	2/15/2005 15:48	349.00	29.1		
656	63.1	2/15/2005 15:49	350.00	29.0		
657	63.1	2/15/2005 15:50	351.00	29.0		
658	63.1	2/15/2005 15:51	352.00	29.0		
659	63.2	2/15/2005 15:52	353.00	28.9		
660	63.3	2/15/2005 15:53	354.00	28.7		
661	63.4	2/15/2005 15:54	355.00	28.6		
662	63.4	2/15/2005 15:55	356.00	28.6		
663	63.5	2/15/2005 15:56	357.00	28.5		
664	63.6	2/15/2005 15:57	358.00	28.4		
665	63.5	2/15/2005 15:58	359.00	28.5		
666	63.5	2/15/2005 15:59	360.00	28.5		
667	63.5	2/15/2005 16:00	361.00	28.5		
668	63.5	2/15/2005 16:01	362.00	28.5		
669	63.6	2/15/2005 16:02	363.00	28.4		
670	63.6	2/15/2005 16:03	364.00	28.4		
671	63.5	2/15/2005 16:04	365.00	28.5		
672	63.5	2/15/2005 16:05	366.00	28.5		
673	63.5	2/15/2005 16:06	367.00	28.5		
674	63.4	2/15/2005 16:07	368.00	28.6		
675	63.2	2/15/2005 16:08	369.00	28.8		
676	63.2	2/15/2005 16:09	370.00	28.8		
677	63.1	2/15/2005 16:10	371.00	28.9		
678	63.0	2/15/2005 16:11	372.00	29.0		
679	63.0	2/15/2005 16:12	373.00	29.0		
680	63.1	2/15/2005 16:13	374.00	28.9		
681	63.1	2/15/2005 16:14	375.00	28.9		
682	63.2	2/15/2005 16:15	376.00	28.8		
683	63.4	2/15/2005 16:16	377.00	28.6		
684	63.3	2/15/2005 16:17	378.00	28.7		
685	63.2	2/15/2005 16:18	379.00	28.8		
686	63.2	2/15/2005 16:19	380.00	28.8		
687	63.2	2/15/2005 16:20	381.00	28.8		
688	63.2	2/15/2005 16:21	382.00	28.8		
689	63.2	2/15/2005 16:22	383.00	28.8		
690	63.2	2/15/2005 16:23	384.00	28.9		
691	63.2	2/15/2005 16:24	385.00	28.9		
692	63.1	2/15/2005 16:25	386.00	29.0		
693	63.2	2/15/2005 16:26	387.00	28.9		
694	63.2	2/15/2005 16:27	388.00	28.9		
695	63.2	2/15/2005 16:28	389.00	28.9		
696	63.2	2/15/2005 16:29	390.00	28.9		
697	63.2	2/15/2005 16:30	391.00	28.9		
698	63.2	2/15/2005 16:31	392.00	28.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
699	63.1	2/15/2005 16:32	393.00	29.0		
700	63.1	2/15/2005 16:33	394.00	29.0		
701	63.2	2/15/2005 16:34	395.00	28.9		
702	63.2	2/15/2005 16:35	396.00	28.9		
703	63.3	2/15/2005 16:36	397.00	28.8		
704	63.2	2/15/2005 16:37	398.00	28.9		
705	63.2	2/15/2005 16:38	399.00	28.8		
706	63.2	2/15/2005 16:39	400.00	28.8		
707	63.2	2/15/2005 16:40	401.00	28.8		
708	63.1	2/15/2005 16:41	402.00	28.9		
709	62.5	2/15/2005 16:42	403.00	29.5		
710	62.1	2/15/2005 16:43	404.00	29.9		
711	61.8	2/15/2005 16:44	405.00	30.2		
712	61.6	2/15/2005 16:45	406.00	30.4		
713	61.6	2/15/2005 16:46	407.00	30.4		
714	61.5	2/15/2005 16:47	408.00	30.5		
715	61.5	2/15/2005 16:48	409.00	30.5		
716	61.4	2/15/2005 16:49	410.00	30.6		
717	61.4	2/15/2005 16:50	411.00	30.6		
718	61.4	2/15/2005 16:51	412.00	30.6		
719	61.4	2/15/2005 16:52	413.00	30.6		
720	61.5	2/15/2005 16:53	414.00	30.6		
721	61.4	2/15/2005 16:54	415.00	30.7		
722	61.5	2/15/2005 16:55	416.00	30.6		
723	61.4	2/15/2005 16:56	417.00	30.7		
724	61.4	2/15/2005 16:57	418.00	30.7		
725	61.5	2/15/2005 16:58	419.00	30.6		
726	61.5	2/15/2005 16:59	420.00	30.6		
727	61.5	2/15/2005 17:00	421.00	30.6		
728	61.5	2/15/2005 17:01	422.00	30.6		
729	61.4	2/15/2005 17:02	423.00	30.7		
730	61.4	2/15/2005 17:03	424.00	30.7		
731	61.5	2/15/2005 17:04	425.00	30.6		
732	61.4	2/15/2005 17:05	426.00	30.7		
733	61.4	2/15/2005 17:06	427.00	30.7		
734	61.4	2/15/2005 17:07	428.00	30.7		
735	61.5	2/15/2005 17:08	429.00	30.6		
736	61.4	2/15/2005 17:09	430.00	30.7		
737	61.4	2/15/2005 17:10	431.00	30.7		
738	61.5	2/15/2005 17:11	432.00	30.6		
739	61.4	2/15/2005 17:12	433.00	30.7		
740	61.5	2/15/2005 17:13	434.00	30.6		
741	61.4	2/15/2005 17:14	435.00	30.7		
742	61.5	2/15/2005 17:15	436.00	30.6		
743	61.5	2/15/2005 17:16	437.00	30.6		
744	61.4	2/15/2005 17:17	438.00	30.7		
745	61.5	2/15/2005 17:18	439.00	30.6		
746	61.5	2/15/2005 17:19	440.00	30.6		
747	61.5	2/15/2005 17:20	441.00	30.6		
748	61.5	2/15/2005 17:21	442.00	30.6		
749	61.5	2/15/2005 17:22	443.00	30.6		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
750	61.5	2/15/2005 17:23	444.00	30.6		
751	61.5	2/15/2005 17:24	445.00	30.6		
752	61.5	2/15/2005 17:25	446.00	30.6		
753	61.5	2/15/2005 17:26	447.00	30.6		
754	61.5	2/15/2005 17:27	448.00	30.6		
755	61.5	2/15/2005 17:28	449.00	30.6		
756	61.5	2/15/2005 17:29	450.00	30.6		
757	61.5	2/15/2005 17:30	451.00	30.6		
758	61.4	2/15/2005 17:31	452.00	30.7		
759	61.4	2/15/2005 17:32	453.00	30.7		
760	61.4	2/15/2005 17:33	454.00	30.7		
761	61.4	2/15/2005 17:34	455.00	30.7		
762	61.3	2/15/2005 17:35	456.00	30.8		
763	61.4	2/15/2005 17:36	457.00	30.7		
764	61.3	2/15/2005 17:37	458.00	30.8		
765	61.3	2/15/2005 17:38	459.00	30.8		
766	61.3	2/15/2005 17:39	460.00	30.8		
767	61.2	2/15/2005 17:40	461.00	30.9		
768	61.2	2/15/2005 17:41	462.00	30.9		
769	61.2	2/15/2005 17:42	463.00	30.9		
770	61.2	2/15/2005 17:43	464.00	30.9		
771	61.3	2/15/2005 17:44	465.00	30.8		
772	61.3	2/15/2005 17:45	466.00	30.8		
773	61.2	2/15/2005 17:46	467.00	30.9		
774	61.2	2/15/2005 17:47	468.00	30.9		
775	61.3	2/15/2005 17:48	469.00	30.8		
776	61.2	2/15/2005 17:49	470.00	30.9		
777	61.2	2/15/2005 17:50	471.00	30.9		
778	61.2	2/15/2005 17:51	472.00	30.9		
779	61.2	2/15/2005 17:52	473.00	30.9		
780	61.3	2/15/2005 17:53	474.00	30.8		
781	61.3	2/15/2005 17:54	475.00	30.8		
782	61.3	2/15/2005 17:55	476.00	30.8		
783	61.2	2/15/2005 17:56	477.00	30.9		
784	61.3	2/15/2005 17:57	478.00	30.8		
785	61.3	2/15/2005 17:58	479.00	30.8		
786	61.3	2/15/2005 17:59	480.00	30.8		
787	61.3	2/15/2005 18:00	481.00	30.8		
788	61.3	2/15/2005 18:01	482.00	30.8		
789	61.4	2/15/2005 18:02	483.00	30.7		
790	61.3	2/15/2005 18:03	484.00	30.8		
791	61.4	2/15/2005 18:04	485.00	30.7		
792	61.4	2/15/2005 18:05	486.00	30.7		
793	61.3	2/15/2005 18:06	487.00	30.8		
794	61.3	2/15/2005 18:07	488.00	30.8		
795	61.3	2/15/2005 18:08	489.00	30.8		
796	61.3	2/15/2005 18:09	490.00	30.8		
797	61.3	2/15/2005 18:10	491.00	30.8		
798	61.4	2/15/2005 18:11	492.00	30.7		
799	61.3	2/15/2005 18:12	493.00	30.8		
800	61.4	2/15/2005 18:13	494.00	30.7		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
801	61.3	2/15/2005 18:14	495.00	30.8		
802	61.3	2/15/2005 18:15	496.00	30.8		
803	61.4	2/15/2005 18:16	497.00	30.7		
804	61.3	2/15/2005 18:17	498.00	30.8		
805	61.3	2/15/2005 18:18	499.00	30.8		
806	61.2	2/15/2005 18:19	500.00	30.9		
807	61.3	2/15/2005 18:20	501.00	30.8		
808	61.3	2/15/2005 18:21	502.00	30.8		
809	61.3	2/15/2005 18:22	503.00	30.8		
810	61.4	2/15/2005 18:23	504.00	30.7		
811	61.5	2/15/2005 18:24	505.00	30.6		
812	61.5	2/15/2005 18:25	506.00	30.6		
813	61.6	2/15/2005 18:26	507.00	30.5		
814	61.7	2/15/2005 18:27	508.00	30.4		
815	61.7	2/15/2005 18:28	509.00	30.4		
816	61.7	2/15/2005 18:29	510.00	30.4		
817	61.7	2/15/2005 18:30	511.00	30.4		
818	61.7	2/15/2005 18:31	512.00	30.4		
819	61.7	2/15/2005 18:32	513.00	30.4		
820	61.6	2/15/2005 18:33	514.00	30.5		
821	61.7	2/15/2005 18:34	515.00	30.4		
822	61.6	2/15/2005 18:35	516.00	30.5		
823	61.7	2/15/2005 18:36	517.00	30.4		
824	61.8	2/15/2005 18:37	518.00	30.3		
825	61.7	2/15/2005 18:38	519.00	30.4		
826	61.8	2/15/2005 18:39	520.00	30.3		
827	61.8	2/15/2005 18:40	521.00	30.3		
828	61.8	2/15/2005 18:41	522.00	30.3		
829	61.8	2/15/2005 18:42	523.00	30.3		
830	61.7	2/15/2005 18:43	524.00	30.4		
831	61.9	2/15/2005 18:44	525.00	30.2		
832	62.1	2/15/2005 18:45	526.00	30.0		
833	62.1	2/15/2005 18:46	527.00	30.0		
834	62.1	2/15/2005 18:47	528.00	30.0		
835	62.1	2/15/2005 18:48	529.00	30.0		
836	62.2	2/15/2005 18:49	530.00	29.9		
837	62.2	2/15/2005 18:50	531.00	29.9		
838	62.3	2/15/2005 18:51	532.00	29.8		
839	62.3	2/15/2005 18:52	533.00	29.8		
840	62.2	2/15/2005 18:53	534.00	29.9		
841	62.2	2/15/2005 18:54	535.00	29.9		
842	62.2	2/15/2005 18:55	536.00	29.9		
843	62.1	2/15/2005 18:56	537.00	30.0		
844	62.2	2/15/2005 18:57	538.00	29.9		
845	62.2	2/15/2005 18:58	539.00	29.9		
846	62.2	2/15/2005 18:59	540.00	29.9		
847	62.2	2/15/2005 19:00	541.00	29.9		
848	62.3	2/15/2005 19:01	542.00	29.8		
849	62.3	2/15/2005 19:02	543.00	29.8		
850	62.2	2/15/2005 19:03	544.00	29.9		
851	62.2	2/15/2005 19:04	545.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
852	62.3	2/15/2005 19:05	546.00	29.8		
853	62.3	2/15/2005 19:06	547.00	29.8		
854	62.2	2/15/2005 19:07	548.00	29.9		
855	62.2	2/15/2005 19:08	549.00	29.9		
856	62.2	2/15/2005 19:09	550.00	29.9		
857	62.3	2/15/2005 19:10	551.00	29.8		
858	62.2	2/15/2005 19:11	552.00	29.9		
859	62.3	2/15/2005 19:12	553.00	29.8		
860	62.2	2/15/2005 19:13	554.00	29.9		
861	62.2	2/15/2005 19:14	555.00	29.9		
862	62.3	2/15/2005 19:15	556.00	29.8		
863	62.3	2/15/2005 19:16	557.00	29.8		
864	62.3	2/15/2005 19:17	558.00	29.8		
865	62.3	2/15/2005 19:18	559.00	29.8		
866	62.2	2/15/2005 19:19	560.00	29.9		
867	62.2	2/15/2005 19:20	561.00	29.9		
868	62.3	2/15/2005 19:21	562.00	29.8		
869	62.3	2/15/2005 19:22	563.00	29.8		
870	62.2	2/15/2005 19:23	564.00	29.9		
871	62.2	2/15/2005 19:24	565.00	29.9		
872	62.3	2/15/2005 19:25	566.00	29.8		
873	62.3	2/15/2005 19:26	567.00	29.8		
874	62.2	2/15/2005 19:27	568.00	29.9		
875	62.2	2/15/2005 19:28	569.00	29.9		
876	62.3	2/15/2005 19:29	570.00	29.8		
877	62.3	2/15/2005 19:30	571.00	29.8		
878	62.3	2/15/2005 19:31	572.00	29.8		
879	62.3	2/15/2005 19:32	573.00	29.8		
880	62.3	2/15/2005 19:33	574.00	29.8		
881	62.3	2/15/2005 19:34	575.00	29.8		
882	62.3	2/15/2005 19:35	576.00	29.8		
883	62.3	2/15/2005 19:36	577.00	29.8		
884	62.3	2/15/2005 19:37	578.00	29.8		
885	62.3	2/15/2005 19:38	579.00	29.8		
886	62.3	2/15/2005 19:39	580.00	29.8		
887	62.2	2/15/2005 19:40	581.00	29.9		
888	62.3	2/15/2005 19:41	582.00	29.8		
889	62.3	2/15/2005 19:42	583.00	29.8		
890	62.3	2/15/2005 19:43	584.00	29.8		
891	62.3	2/15/2005 19:44	585.00	29.8		
892	62.3	2/15/2005 19:45	586.00	29.8		
893	62.2	2/15/2005 19:46	587.00	29.9		
894	62.3	2/15/2005 19:47	588.00	29.8		
895	62.3	2/15/2005 19:48	589.00	29.8		
896	62.2	2/15/2005 19:49	590.00	29.9		
897	62.2	2/15/2005 19:50	591.00	29.9		
898	62.2	2/15/2005 19:51	592.00	29.9		
899	62.2	2/15/2005 19:52	593.00	29.9		
900	62.2	2/15/2005 19:53	594.00	29.9		
901	62.2	2/15/2005 19:54	595.00	29.9		
902	62.2	2/15/2005 19:55	596.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
903	62.2	2/15/2005 19:56	597.00	29.9		
904	62.2	2/15/2005 19:57	598.00	29.9		
905	62.3	2/15/2005 19:58	599.00	29.8		
906	62.3	2/15/2005 19:59	600.00	29.8		
907	62.3	2/15/2005 20:00	601.00	29.8		
908	62.2	2/15/2005 20:01	602.00	29.9		
909	62.2	2/15/2005 20:02	603.00	29.9		
910	62.3	2/15/2005 20:03	604.00	29.8		
911	62.3	2/15/2005 20:04	605.00	29.8		
912	62.3	2/15/2005 20:05	606.00	29.8		
913	62.3	2/15/2005 20:06	607.00	29.8		
914	62.3	2/15/2005 20:07	608.00	29.8		
915	62.2	2/15/2005 20:08	609.00	29.9		
916	62.3	2/15/2005 20:09	610.00	29.8		
917	62.3	2/15/2005 20:10	611.00	29.8		
918	62.3	2/15/2005 20:11	612.00	29.8		
919	62.3	2/15/2005 20:12	613.00	29.8		
920	62.4	2/15/2005 20:13	614.00	29.7		
921	62.3	2/15/2005 20:14	615.00	29.8		
922	62.3	2/15/2005 20:15	616.00	29.8		
923	62.2	2/15/2005 20:16	617.00	29.9		
924	62.3	2/15/2005 20:17	618.00	29.8		
925	62.2	2/15/2005 20:18	619.00	29.9		
926	62.2	2/15/2005 20:19	620.00	29.9		
927	62.2	2/15/2005 20:20	621.00	29.9		
928	62.2	2/15/2005 20:21	622.00	29.9		
929	62.2	2/15/2005 20:22	623.00	29.9		
930	62.2	2/15/2005 20:23	624.00	29.9		
931	62.2	2/15/2005 20:24	625.00	29.9		
932	62.3	2/15/2005 20:25	626.00	29.8		
933	62.2	2/15/2005 20:26	627.00	29.9		
934	62.1	2/15/2005 20:27	628.00	30.0		
935	62.2	2/15/2005 20:28	629.00	29.9		
936	62.2	2/15/2005 20:29	630.00	29.9		
937	62.2	2/15/2005 20:30	631.00	29.9		
938	62.2	2/15/2005 20:31	632.00	29.9		
939	62.2	2/15/2005 20:32	633.00	29.9		
940	62.2	2/15/2005 20:33	634.00	29.9		
941	62.2	2/15/2005 20:34	635.00	29.9		
942	62.2	2/15/2005 20:35	636.00	29.9		
943	62.2	2/15/2005 20:36	637.00	29.9		
944	62.2	2/15/2005 20:37	638.00	29.9		
945	62.2	2/15/2005 20:38	639.00	29.9		
946	62.2	2/15/2005 20:39	640.00	29.9		
947	62.2	2/15/2005 20:40	641.00	29.9		
948	62.3	2/15/2005 20:41	642.00	29.8		
949	62.2	2/15/2005 20:42	643.00	29.9		
950	62.3	2/15/2005 20:43	644.00	29.8		
951	62.2	2/15/2005 20:44	645.00	29.9		
952	62.2	2/15/2005 20:45	646.00	29.9		
953	62.2	2/15/2005 20:46	647.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
954	62.2	2/15/2005 20:47	648.00	29.9		
955	62.2	2/15/2005 20:48	649.00	29.9		
956	62.3	2/15/2005 20:49	650.00	29.8		
957	62.3	2/15/2005 20:50	651.00	29.8		
958	62.2	2/15/2005 20:51	652.00	29.9		
959	62.2	2/15/2005 20:52	653.00	29.9		
960	62.2	2/15/2005 20:53	654.00	29.9		
961	62.3	2/15/2005 20:54	655.00	29.8		
962	62.2	2/15/2005 20:55	656.00	29.9		
963	62.2	2/15/2005 20:56	657.00	29.9		
964	62.2	2/15/2005 20:57	658.00	29.9		
965	62.2	2/15/2005 20:58	659.00	29.9		
966	62.2	2/15/2005 20:59	660.00	29.9		
967	62.3	2/15/2005 21:00	661.00	29.8		
968	62.3	2/15/2005 21:01	662.00	29.8		
969	62.2	2/15/2005 21:02	663.00	29.9		
970	62.3	2/15/2005 21:03	664.00	29.8		
971	62.3	2/15/2005 21:04	665.00	29.8		
972	62.3	2/15/2005 21:05	666.00	29.8		
973	62.2	2/15/2005 21:06	667.00	29.9		
974	62.3	2/15/2005 21:07	668.00	29.8		
975	62.3	2/15/2005 21:08	669.00	29.8		
976	62.4	2/15/2005 21:09	670.00	29.7		
977	62.3	2/15/2005 21:10	671.00	29.8		
978	62.2	2/15/2005 21:11	672.00	29.9		
979	62.3	2/15/2005 21:12	673.00	29.8		
980	62.2	2/15/2005 21:13	674.00	29.9		
981	62.3	2/15/2005 21:14	675.00	29.8		
982	62.3	2/15/2005 21:15	676.00	29.8		
983	62.3	2/15/2005 21:16	677.00	29.8		
984	62.3	2/15/2005 21:17	678.00	29.8		
985	62.3	2/15/2005 21:18	679.00	29.8		
986	62.2	2/15/2005 21:19	680.00	29.9		
987	62.2	2/15/2005 21:20	681.00	29.9		
988	62.2	2/15/2005 21:21	682.00	29.9		
989	62.2	2/15/2005 21:22	683.00	29.9		
990	62.2	2/15/2005 21:23	684.00	29.9		
991	62.3	2/15/2005 21:24	685.00	29.8		
992	62.3	2/15/2005 21:25	686.00	29.8		
993	62.3	2/15/2005 21:26	687.00	29.8		
994	62.2	2/15/2005 21:27	688.00	29.9		
995	62.3	2/15/2005 21:28	689.00	29.8		
996	62.3	2/15/2005 21:29	690.00	29.8		
997	62.2	2/15/2005 21:30	691.00	29.9		
998	62.2	2/15/2005 21:31	692.00	29.9		
999	62.2	2/15/2005 21:32	693.00	29.9		
1000	62.3	2/15/2005 21:33	694.00	29.8		
1001	62.3	2/15/2005 21:34	695.00	29.8		
1002	62.2	2/15/2005 21:35	696.00	29.9		
1003	62.2	2/15/2005 21:36	697.00	29.9		
1004	62.3	2/15/2005 21:37	698.00	29.8		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
1005	62.3	2/15/2005 21:38	699.00	29.8		
1006	62.3	2/15/2005 21:39	700.00	29.8		
1007	62.3	2/15/2005 21:40	701.00	29.8		
1008	62.2	2/15/2005 21:41	702.00	29.9		
1009	62.2	2/15/2005 21:42	703.00	29.9		
1010	62.3	2/15/2005 21:43	704.00	29.8		
1011	62.3	2/15/2005 21:44	705.00	29.8		
1012	62.2	2/15/2005 21:45	706.00	29.9		
1013	62.2	2/15/2005 21:46	707.00	29.9		
1014	62.2	2/15/2005 21:47	708.00	29.9		
1015	62.2	2/15/2005 21:48	709.00	29.9		
1016	62.2	2/15/2005 21:49	710.00	29.9		
1017	62.2	2/15/2005 21:50	711.00	29.9		
1018	62.2	2/15/2005 21:51	712.00	29.9		
1019	62.2	2/15/2005 21:52	713.00	29.9		
1020	62.2	2/15/2005 21:53	714.00	29.9		
1021	62.2	2/15/2005 21:54	715.00	29.9		
1022	62.1	2/15/2005 21:55	716.00	30.0		
1023	62.2	2/15/2005 21:56	717.00	29.9		
1024	62.2	2/15/2005 21:57	718.00	29.9		
1025	62.2	2/15/2005 21:58	719.00	29.9		
1026	62.2	2/15/2005 21:59	720.00	29.9		
1027	62.3	2/15/2005 22:00	721.00	29.8		
1028	62.2	2/15/2005 22:01	722.00	29.9		
1029	62.2	2/15/2005 22:02	723.00	29.9		
1030	62.2	2/15/2005 22:03	724.00	29.9		
1031	62.2	2/15/2005 22:04	725.00	29.9		
1032	62.2	2/15/2005 22:05	726.00	29.9		
1033	62.2	2/15/2005 22:06	727.00	29.9		
1034	62.3	2/15/2005 22:07	728.00	29.8		
1035	62.2	2/15/2005 22:08	729.00	29.9		
1036	62.2	2/15/2005 22:09	730.00	29.9		
1037	62.3	2/15/2005 22:10	731.00	29.8		
1038	62.2	2/15/2005 22:11	732.00	29.9		
1039	62.3	2/15/2005 22:12	733.00	29.8		
1040	62.2	2/15/2005 22:13	734.00	29.9		
1041	62.3	2/15/2005 22:14	735.00	29.8		
1042	62.3	2/15/2005 22:15	736.00	29.8		
1043	62.3	2/15/2005 22:16	737.00	29.8		
1044	62.3	2/15/2005 22:17	738.00	29.8		
1045	62.3	2/15/2005 22:18	739.00	29.8		
1046	62.3	2/15/2005 22:19	740.00	29.8		
1047	62.2	2/15/2005 22:20	741.00	29.9		
1048	62.2	2/15/2005 22:21	742.00	29.9		
1049	62.2	2/15/2005 22:22	743.00	29.9		
1050	62.2	2/15/2005 22:23	744.00	29.9		
1051	62.2	2/15/2005 22:24	745.00	29.9		
1052	62.2	2/15/2005 22:25	746.00	29.9		
1053	62.2	2/15/2005 22:26	747.00	29.9		
1054	62.2	2/15/2005 22:27	748.00	29.9		
1055	62.2	2/15/2005 22:28	749.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1056	62.2	2/15/2005 22:29	750.00	29.9		
1057	62.3	2/15/2005 22:30	751.00	29.8		
1058	62.3	2/15/2005 22:31	752.00	29.8		
1059	62.3	2/15/2005 22:32	753.00	29.8		
1060	62.3	2/15/2005 22:33	754.00	29.8		
1061	62.3	2/15/2005 22:34	755.00	29.8		
1062	62.2	2/15/2005 22:35	756.00	29.9		
1063	62.3	2/15/2005 22:36	757.00	29.8		
1064	62.3	2/15/2005 22:37	758.00	29.8		
1065	62.2	2/15/2005 22:38	759.00	29.9		
1066	62.2	2/15/2005 22:39	760.00	29.9		
1067	62.2	2/15/2005 22:40	761.00	29.9		
1068	62.2	2/15/2005 22:41	762.00	29.9		
1069	62.3	2/15/2005 22:42	763.00	29.8		
1070	62.2	2/15/2005 22:43	764.00	29.9		
1071	62.2	2/15/2005 22:44	765.00	29.9		
1072	62.2	2/15/2005 22:45	766.00	29.9		
1073	62.3	2/15/2005 22:46	767.00	29.8		
1074	62.1	2/15/2005 22:47	768.00	30.0		
1075	62.3	2/15/2005 22:48	769.00	29.8		
1076	62.2	2/15/2005 22:49	770.00	29.9		
1077	62.2	2/15/2005 22:50	771.00	29.9		
1078	62.2	2/15/2005 22:51	772.00	29.9		
1079	62.3	2/15/2005 22:52	773.00	29.8		
1080	62.2	2/15/2005 22:53	774.00	29.9		
1081	62.2	2/15/2005 22:54	775.00	29.9		
1082	62.2	2/15/2005 22:55	776.00	29.9		
1083	62.2	2/15/2005 22:56	777.00	29.9		
1084	62.2	2/15/2005 22:57	778.00	29.9		
1085	62.3	2/15/2005 22:58	779.00	29.8		
1086	62.2	2/15/2005 22:59	780.00	29.9		
1087	62.2	2/15/2005 23:00	781.00	29.9		
1088	62.2	2/15/2005 23:01	782.00	29.9		
1089	62.2	2/15/2005 23:02	783.00	29.9		
1090	62.2	2/15/2005 23:03	784.00	29.9		
1091	62.2	2/15/2005 23:04	785.00	29.9		
1092	62.3	2/15/2005 23:05	786.00	29.8		
1093	62.2	2/15/2005 23:06	787.00	29.9		
1094	62.2	2/15/2005 23:07	788.00	29.9		
1095	62.2	2/15/2005 23:08	789.00	29.9		
1096	62.3	2/15/2005 23:09	790.00	29.8		
1097	62.2	2/15/2005 23:10	791.00	29.9		
1098	62.2	2/15/2005 23:11	792.00	29.9		
1099	62.3	2/15/2005 23:12	793.00	29.8		
1100	62.3	2/15/2005 23:13	794.00	29.8		
1101	62.2	2/15/2005 23:14	795.00	29.9		
1102	62.2	2/15/2005 23:15	796.00	29.9		
1103	62.2	2/15/2005 23:16	797.00	29.9		
1104	62.3	2/15/2005 23:17	798.00	29.8		
1105	62.2	2/15/2005 23:18	799.00	29.9		
1106	62.2	2/15/2005 23:19	800.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
1107	62.2	2/15/2005 23:20	801.00	29.9		
1108	62.2	2/15/2005 23:21	802.00	29.9		
1109	62.3	2/15/2005 23:22	803.00	29.8		
1110	62.2	2/15/2005 23:23	804.00	29.9		
1111	62.3	2/15/2005 23:24	805.00	29.8		
1112	62.3	2/15/2005 23:25	806.00	29.8		
1113	62.3	2/15/2005 23:26	807.00	29.8		
1114	62.2	2/15/2005 23:27	808.00	29.9		
1115	62.2	2/15/2005 23:28	809.00	29.9		
1116	62.3	2/15/2005 23:29	810.00	29.8		
1117	62.2	2/15/2005 23:30	811.00	29.9		
1118	62.2	2/15/2005 23:31	812.00	29.9		
1119	62.2	2/15/2005 23:32	813.00	29.9		
1120	62.2	2/15/2005 23:33	814.00	29.9		
1121	62.2	2/15/2005 23:34	815.00	29.9		
1122	62.3	2/15/2005 23:35	816.00	29.8		
1123	62.2	2/15/2005 23:36	817.00	29.9		
1124	62.3	2/15/2005 23:37	818.00	29.8		
1125	62.2	2/15/2005 23:38	819.00	29.9		
1126	62.3	2/15/2005 23:39	820.00	29.8		
1127	62.3	2/15/2005 23:40	821.00	29.8		
1128	62.3	2/15/2005 23:41	822.00	29.8		
1129	62.3	2/15/2005 23:42	823.00	29.8		
1130	62.2	2/15/2005 23:43	824.00	29.9		
1131	62.2	2/15/2005 23:44	825.00	29.9		
1132	62.3	2/15/2005 23:45	826.00	29.8		
1133	62.3	2/15/2005 23:46	827.00	29.8		
1134	62.2	2/15/2005 23:47	828.00	29.9		
1135	62.3	2/15/2005 23:48	829.00	29.8		
1136	62.2	2/15/2005 23:49	830.00	29.9		
1137	62.2	2/15/2005 23:50	831.00	29.9		
1138	62.3	2/15/2005 23:51	832.00	29.8		
1139	62.2	2/15/2005 23:52	833.00	29.9		
1140	62.2	2/15/2005 23:53	834.00	29.9		
1141	62.2	2/15/2005 23:54	835.00	29.9		
1142	62.3	2/15/2005 23:55	836.00	29.8		
1143	62.2	2/15/2005 23:56	837.00	29.9		
1144	62.2	2/15/2005 23:57	838.00	29.9		
1145	62.3	2/15/2005 23:58	839.00	29.8		
1146	62.3	2/15/2005 23:59	840.00	29.8		
1147	62.3	2/16/2005 0:00	841.00	29.8		
1148	62.3	2/16/2005 0:01	842.00	29.8		
1149	62.2	2/16/2005 0:02	843.00	29.9		
1150	62.3	2/16/2005 0:03	844.00	29.8		
1151	62.2	2/16/2005 0:04	845.00	29.9		
1152	62.3	2/16/2005 0:05	846.00	29.8		
1153	62.3	2/16/2005 0:06	847.00	29.8		
1154	62.3	2/16/2005 0:07	848.00	29.8		
1155	62.2	2/16/2005 0:08	849.00	29.9		
1156	62.2	2/16/2005 0:09	850.00	29.9		
1157	62.3	2/16/2005 0:10	851.00	29.8		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1158	62.3	2/16/2005 0:11	852.00	29.8		
1159	62.3	2/16/2005 0:12	853.00	29.8		
1160	62.2	2/16/2005 0:13	854.00	29.9		
1161	62.3	2/16/2005 0:14	855.00	29.8		
1162	62.2	2/16/2005 0:15	856.00	29.9		
1163	62.2	2/16/2005 0:16	857.00	29.9		
1164	62.3	2/16/2005 0:17	858.00	29.8		
1165	62.3	2/16/2005 0:18	859.00	29.8		
1166	62.3	2/16/2005 0:19	860.00	29.8		
1167	62.3	2/16/2005 0:20	861.00	29.8		
1168	62.3	2/16/2005 0:21	862.00	29.8		
1169	62.2	2/16/2005 0:22	863.00	29.9		
1170	62.3	2/16/2005 0:23	864.00	29.8		
1171	62.2	2/16/2005 0:24	865.00	29.9		
1172	62.2	2/16/2005 0:25	866.00	29.9		
1173	62.3	2/16/2005 0:26	867.00	29.8		
1174	62.3	2/16/2005 0:27	868.00	29.8		
1175	62.3	2/16/2005 0:28	869.00	29.8		
1176	62.3	2/16/2005 0:29	870.00	29.8		
1177	62.3	2/16/2005 0:30	871.00	29.8		
1178	62.3	2/16/2005 0:31	872.00	29.8		
1179	62.3	2/16/2005 0:32	873.00	29.8		
1180	62.2	2/16/2005 0:33	874.00	29.9		
1181	62.2	2/16/2005 0:34	875.00	29.9		
1182	62.2	2/16/2005 0:35	876.00	29.9		
1183	62.2	2/16/2005 0:36	877.00	29.9		
1184	62.3	2/16/2005 0:37	878.00	29.8		
1185	62.3	2/16/2005 0:38	879.00	29.8		
1186	62.2	2/16/2005 0:39	880.00	29.9		
1187	62.2	2/16/2005 0:40	881.00	29.9		
1188	62.3	2/16/2005 0:41	882.00	29.8		
1189	62.3	2/16/2005 0:42	883.00	29.8		
1190	62.2	2/16/2005 0:43	884.00	29.9		
1191	62.1	2/16/2005 0:44	885.00	30.0		
1192	62.2	2/16/2005 0:45	886.00	29.9		
1193	62.2	2/16/2005 0:46	887.00	29.9		
1194	62.3	2/16/2005 0:47	888.00	29.8		
1195	62.2	2/16/2005 0:48	889.00	29.9		
1196	62.2	2/16/2005 0:49	890.00	29.9		
1197	62.2	2/16/2005 0:50	891.00	29.9		
1198	62.3	2/16/2005 0:51	892.00	29.8		
1199	62.3	2/16/2005 0:52	893.00	29.8		
1200	62.3	2/16/2005 0:53	894.00	29.8		
1201	62.3	2/16/2005 0:54	895.00	29.8		
1202	62.2	2/16/2005 0:55	896.00	29.9		
1203	62.2	2/16/2005 0:56	897.00	29.9		
1204	62.2	2/16/2005 0:57	898.00	29.9		
1205	62.2	2/16/2005 0:58	899.00	29.9		
1206	62.2	2/16/2005 0:59	900.00	29.9		
1207	62.3	2/16/2005 1:00	901.00	29.8		
1208	62.2	2/16/2005 1:01	902.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
1209	62.2	2/16/2005 1:02	903.00	29.9		
1210	62.2	2/16/2005 1:03	904.00	29.9		
1211	62.3	2/16/2005 1:04	905.00	29.8		
1212	62.2	2/16/2005 1:05	906.00	29.9		
1213	62.3	2/16/2005 1:06	907.00	29.8		
1214	62.3	2/16/2005 1:07	908.00	29.8		
1215	62.2	2/16/2005 1:08	909.00	29.9		
1216	62.3	2/16/2005 1:09	910.00	29.8		
1217	62.3	2/16/2005 1:10	911.00	29.8		
1218	62.3	2/16/2005 1:11	912.00	29.8		
1219	62.3	2/16/2005 1:12	913.00	29.8		
1220	62.3	2/16/2005 1:13	914.00	29.8		
1221	62.2	2/16/2005 1:14	915.00	29.9		
1222	62.2	2/16/2005 1:15	916.00	29.9		
1223	62.2	2/16/2005 1:16	917.00	29.9		
1224	62.2	2/16/2005 1:17	918.00	29.9		
1225	62.3	2/16/2005 1:18	919.00	29.8		
1226	62.2	2/16/2005 1:19	920.00	29.9		
1227	62.2	2/16/2005 1:20	921.00	29.9		
1228	62.2	2/16/2005 1:21	922.00	29.9		
1229	62.3	2/16/2005 1:22	923.00	29.8		
1230	62.2	2/16/2005 1:23	924.00	29.9		
1231	62.3	2/16/2005 1:24	925.00	29.8		
1232	62.3	2/16/2005 1:25	926.00	29.8		
1233	62.3	2/16/2005 1:26	927.00	29.8		
1234	62.3	2/16/2005 1:27	928.00	29.8		
1235	62.3	2/16/2005 1:28	929.00	29.8		
1236	62.3	2/16/2005 1:29	930.00	29.8		
1237	62.2	2/16/2005 1:30	931.00	29.9		
1238	62.3	2/16/2005 1:31	932.00	29.8		
1239	62.2	2/16/2005 1:32	933.00	29.9		
1240	62.3	2/16/2005 1:33	934.00	29.8		
1241	62.3	2/16/2005 1:34	935.00	29.8		
1242	62.3	2/16/2005 1:35	936.00	29.8		
1243	62.3	2/16/2005 1:36	937.00	29.8		
1244	62.3	2/16/2005 1:37	938.00	29.8		
1245	62.3	2/16/2005 1:38	939.00	29.8		
1246	62.2	2/16/2005 1:39	940.00	29.9		
1247	62.3	2/16/2005 1:40	941.00	29.8		
1248	62.2	2/16/2005 1:41	942.00	29.9		
1249	62.2	2/16/2005 1:42	943.00	29.9		
1250	62.3	2/16/2005 1:43	944.00	29.8		
1251	62.2	2/16/2005 1:44	945.00	29.9		
1252	62.2	2/16/2005 1:45	946.00	29.9		
1253	62.2	2/16/2005 1:46	947.00	29.9		
1254	62.3	2/16/2005 1:47	948.00	29.8		
1255	62.2	2/16/2005 1:48	949.00	29.9		
1256	62.3	2/16/2005 1:49	950.00	29.8		
1257	62.3	2/16/2005 1:50	951.00	29.8		
1258	62.2	2/16/2005 1:51	952.00	29.9		
1259	62.3	2/16/2005 1:52	953.00	29.8		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
1260	62.3	2/16/2005 1:53	954.00	29.8		
1261	62.2	2/16/2005 1:54	955.00	29.9		
1262	62.3	2/16/2005 1:55	956.00	29.8		
1263	62.3	2/16/2005 1:56	957.00	29.8		
1264	62.3	2/16/2005 1:57	958.00	29.8		
1265	62.3	2/16/2005 1:58	959.00	29.8		
1266	62.3	2/16/2005 1:59	960.00	29.8		
1267	62.3	2/16/2005 2:00	961.00	29.8		
1268	62.3	2/16/2005 2:01	962.00	29.8		
1269	62.3	2/16/2005 2:02	963.00	29.8		
1270	62.3	2/16/2005 2:03	964.00	29.8		
1271	62.3	2/16/2005 2:04	965.00	29.8		
1272	62.2	2/16/2005 2:05	966.00	29.9		
1273	62.3	2/16/2005 2:06	967.00	29.8		
1274	62.2	2/16/2005 2:07	968.00	29.9		
1275	62.3	2/16/2005 2:08	969.00	29.8		
1276	62.2	2/16/2005 2:09	970.00	29.9		
1277	62.3	2/16/2005 2:10	971.00	29.8		
1278	62.3	2/16/2005 2:11	972.00	29.8		
1279	62.3	2/16/2005 2:12	973.00	29.8		
1280	62.3	2/16/2005 2:13	974.00	29.8		
1281	62.2	2/16/2005 2:14	975.00	29.9		
1282	62.3	2/16/2005 2:15	976.00	29.8		
1283	62.3	2/16/2005 2:16	977.00	29.8		
1284	62.3	2/16/2005 2:17	978.00	29.8		
1285	62.3	2/16/2005 2:18	979.00	29.8		
1286	62.3	2/16/2005 2:19	980.00	29.8		
1287	62.3	2/16/2005 2:20	981.00	29.8		
1288	62.3	2/16/2005 2:21	982.00	29.8		
1289	62.2	2/16/2005 2:22	983.00	29.9		
1290	62.3	2/16/2005 2:23	984.00	29.8		
1291	62.2	2/16/2005 2:28	989.00	29.9		
1292	62.1	2/16/2005 2:33	994.00	30.0		
1293	62.1	2/16/2005 2:38	999.00	30.0		
1294	62.1	2/16/2005 2:43	1004.00	30.0		
1295	62.1	2/16/2005 2:48	1009.00	30.0		
1296	62.1	2/16/2005 2:53	1014.00	29.9		
1297	62.1	2/16/2005 2:58	1019.00	29.9		
1298	62.1	2/16/2005 3:03	1024.00	29.9		
1299	62.1	2/16/2005 3:08	1029.00	29.9		
1300	62.1	2/16/2005 3:13	1034.00	29.9		
1301	62.1	2/16/2005 3:18	1039.00	29.9		
1302	62.1	2/16/2005 3:23	1044.00	29.9		
1303	62.1	2/16/2005 3:28	1049.00	29.9		
1304	62.1	2/16/2005 3:33	1054.00	29.9		
1305	62.1	2/16/2005 3:38	1059.00	29.9		
1306	62.0	2/16/2005 3:43	1064.00	30.0		
1307	62.0	2/16/2005 3:48	1069.00	30.0		
1308	62.1	2/16/2005 3:53	1074.00	29.9		
1309	62.1	2/16/2005 3:58	1079.00	29.9		
1310	62.0	2/16/2005 4:03	1084.00	30.0		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1311	62.1	2/16/2005 4:08	1089.00	29.9		
1312	62.0	2/16/2005 4:13	1094.00	30.0		
1313	62.1	2/16/2005 4:18	1099.00	29.9		
1314	62.1	2/16/2005 4:23	1104.00	29.9		
1315	62.1	2/16/2005 4:28	1109.00	29.9		
1316	62.0	2/16/2005 4:33	1114.00	30.0		
1317	62.1	2/16/2005 4:38	1119.00	29.9		
1318	62.0	2/16/2005 4:43	1124.00	30.0		
1319	62.1	2/16/2005 4:48	1129.00	29.9		
1320	62.1	2/16/2005 4:53	1134.00	29.9		
1321	62.0	2/16/2005 4:58	1139.00	30.0		
1322	62.1	2/16/2005 5:03	1144.00	29.9		
1323	62.1	2/16/2005 5:08	1149.00	30.0		
1324	62.1	2/16/2005 5:13	1154.00	30.0		
1325	62.1	2/16/2005 5:18	1159.00	30.0		
1326	62.1	2/16/2005 5:23	1164.00	30.0		
1327	62.1	2/16/2005 5:28	1169.00	30.0		
1328	62.1	2/16/2005 5:33	1174.00	30.0		
1329	62.2	2/16/2005 5:38	1179.00	29.9		
1330	62.2	2/16/2005 5:43	1184.00	29.9		
1331	62.1	2/16/2005 5:48	1189.00	30.0		
1332	62.2	2/16/2005 5:53	1194.00	29.9		
1333	62.1	2/16/2005 5:58	1199.00	30.0		
1334	62.1	2/16/2005 6:03	1204.00	30.0		
1335	62.1	2/16/2005 6:08	1209.00	30.0		
1336	62.1	2/16/2005 6:13	1214.00	30.0		
1337	62.1	2/16/2005 6:18	1219.00	30.0		
1338	62.1	2/16/2005 6:23	1224.00	30.0		
1339	62.2	2/16/2005 6:28	1229.00	29.9		
1340	62.2	2/16/2005 6:33	1234.00	29.9		
1341	62.2	2/16/2005 6:38	1239.00	29.9		
1342	62.1	2/16/2005 6:43	1244.00	30.0		
1343	62.1	2/16/2005 6:48	1249.00	30.0		
1344	62.2	2/16/2005 6:53	1254.00	29.9		
1345	62.1	2/16/2005 6:58	1259.00	30.0		
1346	62.1	2/16/2005 7:03	1264.00	30.0		
1347	62.1	2/16/2005 7:08	1269.00	30.0		
1348	62.1	2/16/2005 7:13	1274.00	30.0		
1349	62.1	2/16/2005 7:18	1279.00	30.0		
1350	62.2	2/16/2005 7:23	1284.00	29.9		
1351	62.1	2/16/2005 7:28	1289.00	30.0		
1352	62.1	2/16/2005 7:33	1294.00	30.0		
1353	62.1	2/16/2005 7:38	1299.00	30.0		
1354	62.2	2/16/2005 7:43	1304.00	29.9		
1355	62.2	2/16/2005 7:48	1309.00	29.9		
1356	62.1	2/16/2005 7:53	1314.00	30.0		
1357	62.1	2/16/2005 7:58	1319.00	30.0		
1358	62.1	2/16/2005 8:03	1324.00	30.0		
1359	62.2	2/16/2005 8:08	1329.00	29.9		
1360	62.2	2/16/2005 8:13	1334.00	29.9		
1361	62.2	2/16/2005 8:18	1339.00	29.9		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
1362	62.2	2/16/2005 8:23	1344.00	29.9		
1363	62.2	2/16/2005 8:28	1349.00	29.9		
1364	62.2	2/16/2005 8:33	1354.00	29.9		
1365	62.2	2/16/2005 8:38	1359.00	29.9		
1366	62.2	2/16/2005 8:43	1364.00	29.9		
1367	62.2	2/16/2005 8:48	1369.00	29.9		
1368	62.2	2/16/2005 8:53	1374.00	29.9		
1369	62.2	2/16/2005 8:58	1379.00	29.9		
1370	62.1	2/16/2005 9:03	1384.00	30.0		
1371	62.1	2/16/2005 9:08	1389.00	30.0		
1372	61.5	2/16/2005 9:13	1394.00	30.6		
1373	60.9	2/16/2005 9:18	1399.00	31.2		
1374	60.9	2/16/2005 9:23	1404.00	31.2		
1375	61.1	2/16/2005 9:28	1409.00	31.0		
1376	61.1	2/16/2005 9:33	1414.00	31.0		
1377	61.0	2/16/2005 9:38	1419.00	31.1		
1378	61.1	2/16/2005 9:43	1424.00	31.0		
1379	61.1	2/16/2005 9:48	1429.00	31.0		
1380	61.0	2/16/2005 9:53	1434.00	31.1		
1381	61.0	2/16/2005 9:58	1439.00	31.1		
1382	61.1	2/16/2005 10:03	1444.00	31.0		
1383	61.1	2/16/2005 10:08	1449.00	31.0		
1384	61.0	2/16/2005 10:13	1454.00	31.1		
1385	61.0	2/16/2005 10:18	1459.00	31.1		
1386	60.8	2/16/2005 10:23	1464.00	31.3		
1387	60.8	2/16/2005 10:28	1469.00	31.3		
1388	60.7	2/16/2005 10:33	1474.00	31.4		
1389	60.7	2/16/2005 10:38	1479.00	31.4		
1390	60.8	2/16/2005 10:43	1484.00	31.3		
1391	60.8	2/16/2005 10:48	1489.00	31.3		
1392	60.8	2/16/2005 10:53	1494.00	31.2		
1393	60.7	2/16/2005 10:58	1499.00	31.3		
1394	60.6	2/16/2005 11:03	1504.00	31.4		
1395	60.7	2/16/2005 11:08	1509.00	31.4		
1396	60.7	2/16/2005 11:13	1514.00	31.4		
1397	60.8	2/16/2005 11:18	1519.00	31.3		
1398	60.8	2/16/2005 11:23	1524.00	31.3		
1399	60.8	2/16/2005 11:28	1529.00	31.3		
1400	60.8	2/16/2005 11:33	1534.00	31.3		
1401	60.8	2/16/2005 11:38	1539.00	31.3		
1402	60.8	2/16/2005 11:43	1544.00	31.3		
1403	60.8	2/16/2005 11:48	1549.00	31.3		
1404	60.8	2/16/2005 11:53	1554.00	31.3		
1405	60.8	2/16/2005 11:58	1559.00	31.3		
1406	60.8	2/16/2005 12:03	1564.00	31.3		
1407	60.8	2/16/2005 12:08	1569.00	31.3		
1408	60.7	2/16/2005 12:13	1574.00	31.4		
1409	60.8	2/16/2005 12:18	1579.00	31.3		
1410	60.7	2/16/2005 12:23	1584.00	31.4		
1411	60.7	2/16/2005 12:28	1589.00	31.4		
1412	60.8	2/16/2005 12:33	1594.00	31.3		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1413	60.8	2/16/2005 12:38	1599.00	31.3		
1414	60.8	2/16/2005 12:43	1604.00	31.3		
1415	60.8	2/16/2005 12:48	1609.00	31.3		
1416	60.8	2/16/2005 12:53	1614.00	31.3		
1417	60.8	2/16/2005 12:58	1619.00	31.3		
1418	60.8	2/16/2005 13:03	1624.00	31.3		
1419	60.7	2/16/2005 13:08	1629.00	31.4		
1420	60.8	2/16/2005 13:13	1634.00	31.3		
1421	60.7	2/16/2005 13:18	1639.00	31.4		
1422	60.7	2/16/2005 13:23	1644.00	31.4		
1423	60.7	2/16/2005 13:28	1649.00	31.4		
1424	60.7	2/16/2005 13:33	1654.00	31.4		
1425	60.7	2/16/2005 13:38	1659.00	31.4		
1426	60.8	2/16/2005 13:43	1664.00	31.3		
1427	60.7	2/16/2005 13:48	1669.00	31.4		
1428	60.7	2/16/2005 13:53	1674.00	31.4		
1429	60.7	2/16/2005 13:58	1679.00	31.4		
1430	60.7	2/16/2005 14:03	1684.00	31.4		
1431	60.7	2/16/2005 14:08	1689.00	31.4		
1432	60.7	2/16/2005 14:13	1694.00	31.4		
1433	60.8	2/16/2005 14:18	1699.00	31.3		
1434	60.7	2/16/2005 14:23	1704.00	31.4		
1435	60.7	2/16/2005 14:28	1709.00	31.4		
1436	60.7	2/16/2005 14:33	1714.00	31.4		
1437	60.7	2/16/2005 14:38	1719.00	31.4		
1438	60.7	2/16/2005 14:43	1724.00	31.4		
1439	60.7	2/16/2005 14:48	1729.00	31.4		
1440	60.7	2/16/2005 14:53	1734.00	31.3		
1441	60.7	2/16/2005 14:58	1739.00	31.3		
1442	60.7	2/16/2005 15:03	1744.00	31.3		
1443	60.7	2/16/2005 15:08	1749.00	31.3		
1444	60.7	2/16/2005 15:13	1754.00	31.3		
1445	60.7	2/16/2005 15:18	1759.00	31.3		
1446	60.7	2/16/2005 15:23	1764.00	31.3		
1447	60.7	2/16/2005 15:28	1769.00	31.3		
1448	60.7	2/16/2005 15:33	1774.00	31.3		
1449	60.7	2/16/2005 15:38	1779.00	31.3		
1450	60.7	2/16/2005 15:43	1784.00	31.3		
1451	60.7	2/16/2005 15:48	1789.00	31.3		
1452	60.8	2/16/2005 15:53	1794.00	31.3		
1453	60.7	2/16/2005 15:58	1799.00	31.4		
1454	60.8	2/16/2005 16:03	1804.00	31.3		
1455	60.7	2/16/2005 16:08	1809.00	31.3		
1456	60.7	2/16/2005 16:13	1814.00	31.3		
1457	60.7	2/16/2005 16:18	1819.00	31.3		
1458	60.7	2/16/2005 16:23	1824.00	31.3		
1459	60.7	2/16/2005 16:28	1829.00	31.3		
1460	60.7	2/16/2005 16:33	1834.00	31.3		
1461	60.7	2/16/2005 16:38	1839.00	31.3		
1462	61.0	2/16/2005 16:43	1844.00	31.0		
1463	61.2	2/16/2005 16:48	1849.00	30.8		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1464	61.3	2/16/2005 16:53	1854.00	30.7		
1465	61.2	2/16/2005 16:58	1859.00	30.8		
1466	61.2	2/16/2005 17:03	1864.00	30.8		
1467	61.2	2/16/2005 17:08	1869.00	30.8		
1468	61.2	2/16/2005 17:13	1874.00	30.8		
1469	61.1	2/16/2005 17:18	1879.00	30.9		
1470	61.3	2/16/2005 17:23	1884.00	30.8		
1471	61.4	2/16/2005 17:28	1889.00	30.7		
1472	61.3	2/16/2005 17:33	1894.00	30.8		
1473	61.2	2/16/2005 17:38	1899.00	30.8		
1474	61.2	2/16/2005 17:43	1904.00	30.8		
1475	61.2	2/16/2005 17:48	1909.00	30.8		
1476	61.2	2/16/2005 17:53	1914.00	30.8		
1477	61.3	2/16/2005 17:58	1919.00	30.7		
1478	61.2	2/16/2005 18:03	1924.00	30.8		
1479	61.3	2/16/2005 18:08	1929.00	30.7		
1480	61.2	2/16/2005 18:13	1934.00	30.8		
1481	61.2	2/16/2005 18:18	1939.00	30.8		
1482	61.2	2/16/2005 18:23	1944.00	30.8		
1483	61.2	2/16/2005 18:28	1949.00	30.8		
1484	61.3	2/16/2005 18:33	1954.00	30.7		
1485	61.3	2/16/2005 18:38	1959.00	30.7		
1486	61.2	2/16/2005 18:43	1964.00	30.8		
1487	61.2	2/16/2005 18:48	1969.00	30.8		
1488	61.2	2/16/2005 18:53	1974.00	30.8		
1489	61.2	2/16/2005 18:58	1979.00	30.8		
1490	61.3	2/16/2005 19:03	1984.00	30.7		
1491	61.2	2/16/2005 19:08	1989.00	30.8		
1492	61.2	2/16/2005 19:13	1994.00	30.8		
1493	61.2	2/16/2005 19:18	1999.00	30.8		
1494	61.3	2/16/2005 19:23	2004.00	30.7		
1495	61.3	2/16/2005 19:28	2009.00	30.7		
1496	61.2	2/16/2005 19:33	2014.00	30.8		
1497	61.3	2/16/2005 19:38	2019.00	30.7		
1498	61.2	2/16/2005 19:43	2024.00	30.8		
1499	61.3	2/16/2005 19:48	2029.00	30.7		
1500	61.2	2/16/2005 19:53	2034.00	30.8		
1501	61.3	2/16/2005 19:58	2039.00	30.7		
1502	61.2	2/16/2005 20:03	2044.00	30.8		
1503	61.2	2/16/2005 20:08	2049.00	30.8		
1504	61.2	2/16/2005 20:13	2054.00	30.8		
1505	61.3	2/16/2005 20:18	2059.00	30.7		
1506	61.2	2/16/2005 20:23	2064.00	30.8		
1507	61.2	2/16/2005 20:28	2069.00	30.8		
1508	61.2	2/16/2005 20:33	2074.00	30.8		
1509	61.2	2/16/2005 20:38	2079.00	30.8		
1510	61.2	2/16/2005 20:43	2084.00	30.8		
1511	61.2	2/16/2005 20:48	2089.00	30.8		
1512	61.2	2/16/2005 20:53	2094.00	30.8		
1513	61.3	2/16/2005 20:58	2099.00	30.7		
1514	61.3	2/16/2005 21:03	2104.00	30.7		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1515	61.3	2/16/2005 21:08	2109.00	30.8		
1516	61.4	2/16/2005 21:13	2114.00	30.7		
1517	61.3	2/16/2005 21:18	2119.00	30.8		
1518	61.2	2/16/2005 21:23	2124.00	30.9		
1519	61.3	2/16/2005 21:28	2129.00	30.8		
1520	61.4	2/16/2005 21:33	2134.00	30.7		
1521	61.3	2/16/2005 21:38	2139.00	30.8		
1522	61.3	2/16/2005 21:43	2144.00	30.8		
1523	61.4	2/16/2005 21:48	2149.00	30.7		
1524	61.3	2/16/2005 21:53	2154.00	30.8		
1525	61.3	2/16/2005 21:58	2159.00	30.8		
1526	61.3	2/16/2005 22:03	2164.00	30.8		
1527	61.3	2/16/2005 22:08	2169.00	30.7		
1528	61.3	2/16/2005 22:13	2174.00	30.7		
1529	61.2	2/16/2005 22:18	2179.00	30.8		
1530	61.4	2/16/2005 22:23	2184.00	30.7		
1531	61.3	2/16/2005 22:28	2189.00	30.8		
1532	61.3	2/16/2005 22:33	2194.00	30.8		
1533	61.3	2/16/2005 22:38	2199.00	30.8		
1534	61.3	2/16/2005 22:43	2204.00	30.8		
1535	61.3	2/16/2005 22:48	2209.00	30.8		
1536	61.4	2/16/2005 22:53	2214.00	30.7		
1537	61.4	2/16/2005 22:58	2219.00	30.7		
1538	61.3	2/16/2005 23:03	2224.00	30.8		
1539	61.3	2/16/2005 23:08	2229.00	30.8		
1540	61.3	2/16/2005 23:13	2234.00	30.8		
1541	61.3	2/16/2005 23:18	2239.00	30.8		
1542	61.3	2/16/2005 23:23	2244.00	30.8		
1543	61.3	2/16/2005 23:28	2249.00	30.8		
1544	61.3	2/16/2005 23:33	2254.00	30.8		
1545	61.4	2/16/2005 23:38	2259.00	30.7		
1546	61.3	2/16/2005 23:43	2264.00	30.8		
1547	61.3	2/16/2005 23:48	2269.00	30.8		
1548	61.3	2/16/2005 23:53	2274.00	30.8		
1549	61.3	2/16/2005 23:58	2279.00	30.8		
1550	61.3	2/17/2005 0:03	2284.00	30.8		
1551	61.3	2/17/2005 0:08	2289.00	30.8		
1552	61.3	2/17/2005 0:13	2294.00	30.8		
1553	61.3	2/17/2005 0:18	2299.00	30.8		
1554	61.3	2/17/2005 0:23	2304.00	30.8		
1555	61.3	2/17/2005 0:28	2309.00	30.8		
1556	61.4	2/17/2005 0:33	2314.00	30.7		
1557	61.3	2/17/2005 0:38	2319.00	30.8		
1558	61.3	2/17/2005 0:43	2324.00	30.8		
1559	61.3	2/17/2005 0:48	2329.00	30.8		
1560	61.3	2/17/2005 0:53	2334.00	30.8		
1561	61.3	2/17/2005 0:58	2339.00	30.8		
1562	61.3	2/17/2005 1:03	2344.00	30.8		
1563	61.3	2/17/2005 1:08	2349.00	30.8		
1564	61.4	2/17/2005 1:13	2354.00	30.7		
1565	61.4	2/17/2005 1:18	2359.00	30.7		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began</b>	<b>Barometrically Corrected Drawdown</b>	<b>Time Since Pumping Stopped</b>	<b>t/t'</b>
	<b>(ft)</b>		<b>(minutes)</b>	<b>(ft)</b>	<b>(minutes)</b>	
1566	61.4	2/17/2005 1:23	2364.00	30.7		
1567	61.2	2/17/2005 1:28	2369.00	30.9		
1568	61.3	2/17/2005 1:33	2374.00	30.8		
1569	61.3	2/17/2005 1:38	2379.00	30.8		
1570	61.3	2/17/2005 1:43	2384.00	30.8		
1571	61.3	2/17/2005 1:48	2389.00	30.8		
1572	61.2	2/17/2005 1:53	2394.00	30.9		
1573	61.3	2/17/2005 1:58	2399.00	30.8		
1574	61.3	2/17/2005 2:03	2404.00	30.8		
1575	61.3	2/17/2005 2:08	2409.00	30.7		
1576	61.3	2/17/2005 2:13	2414.00	30.7		
1577	61.3	2/17/2005 2:18	2419.00	30.7		
1578	61.3	2/17/2005 2:23	2424.00	30.8		
1579	61.3	2/17/2005 2:28	2429.00	30.8		
1580	61.3	2/17/2005 2:33	2434.00	30.8		
1581	61.3	2/17/2005 2:38	2439.00	30.7		
1582	61.3	2/17/2005 2:43	2444.00	30.7		
1583	61.3	2/17/2005 2:48	2449.00	30.7		
1584	61.3	2/17/2005 2:53	2454.00	30.7		
1585	61.3	2/17/2005 2:58	2459.00	30.7		
1586	61.3	2/17/2005 3:03	2464.00	30.7		
1587	61.4	2/17/2005 3:08	2469.00	30.7		
1588	61.4	2/17/2005 3:13	2474.00	30.7		
1589	61.3	2/17/2005 3:18	2479.00	30.8		
1590	61.3	2/17/2005 3:23	2484.00	30.7		
1591	61.2	2/17/2005 3:28	2489.00	30.8		
1592	61.3	2/17/2005 3:33	2494.00	30.7		
1593	61.3	2/17/2005 3:38	2499.00	30.8		
1594	61.3	2/17/2005 3:43	2504.00	30.8		
1595	61.4	2/17/2005 3:48	2509.00	30.7		
1596	61.5	2/17/2005 3:53	2514.00	30.6		
1597	61.4	2/17/2005 3:58	2519.00	30.7		
1598	61.3	2/17/2005 4:03	2524.00	30.8		
1599	61.2	2/17/2005 4:08	2529.00	30.8		
1600	61.4	2/17/2005 4:13	2534.00	30.6		
1601	61.3	2/17/2005 4:18	2539.00	30.7		
1602	61.4	2/17/2005 4:23	2544.00	30.7		
1603	61.4	2/17/2005 4:28	2549.00	30.7		
1604	61.4	2/17/2005 4:33	2554.00	30.7		
1605	61.4	2/17/2005 4:38	2559.00	30.7		
1606	61.4	2/17/2005 4:43	2564.00	30.7		
1607	61.4	2/17/2005 4:48	2569.00	30.7		
1608	61.4	2/17/2005 4:53	2574.00	30.7		
1609	61.4	2/17/2005 4:58	2579.00	30.7		
1610	61.4	2/17/2005 5:03	2584.00	30.7		
1611	61.5	2/17/2005 5:08	2589.00	30.6		
1612	61.4	2/17/2005 5:13	2594.00	30.7		
1613	61.4	2/17/2005 5:18	2599.00	30.7		
1614	61.3	2/17/2005 5:23	2604.00	30.8		
1615	61.4	2/17/2005 5:28	2609.00	30.7		
1616	61.4	2/17/2005 5:33	2614.00	30.7		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1617	61.4	2/17/2005 5:38	2619.00	30.7		
1618	61.3	2/17/2005 5:43	2624.00	30.8		
1619	61.4	2/17/2005 5:48	2629.00	30.7		
1620	61.5	2/17/2005 5:53	2634.00	30.6		
1621	61.4	2/17/2005 5:58	2639.00	30.7		
1622	61.3	2/17/2005 6:03	2644.00	30.8		
1623	61.4	2/17/2005 6:08	2649.00	30.7		
1624	61.4	2/17/2005 6:13	2654.00	30.7		
1625	61.4	2/17/2005 6:18	2659.00	30.7		
1626	61.3	2/17/2005 6:23	2664.00	30.8		
1627	61.3	2/17/2005 6:28	2669.00	30.8		
1628	61.4	2/17/2005 6:33	2674.00	30.7		
1629	61.4	2/17/2005 6:38	2679.00	30.7		
1630	61.4	2/17/2005 6:43	2684.00	30.7		
1631	61.5	2/17/2005 6:48	2689.00	30.6		
1632	61.3	2/17/2005 6:53	2694.00	30.8		
1633	61.4	2/17/2005 6:58	2699.00	30.7		
1634	61.3	2/17/2005 7:03	2704.00	30.8		
1635	61.3	2/17/2005 7:08	2709.00	30.8		
1636	61.4	2/17/2005 7:13	2714.00	30.7		
1637	61.4	2/17/2005 7:18	2719.00	30.7		
1638	61.5	2/17/2005 7:23	2724.00	30.6		
1639	61.4	2/17/2005 7:28	2729.00	30.7		
1640	61.4	2/17/2005 7:33	2734.00	30.7		
1641	61.4	2/17/2005 7:38	2739.00	30.7		
1642	61.4	2/17/2005 7:43	2744.00	30.7		
1643	61.4	2/17/2005 7:48	2749.00	30.7		
1644	61.4	2/17/2005 7:53	2754.00	30.7		
1645	61.4	2/17/2005 7:58	2759.00	30.7		
1646	61.4	2/17/2005 8:03	2764.00	30.7		
1647	61.4	2/17/2005 8:08	2769.00	30.7		
1648	61.4	2/17/2005 8:13	2774.00	30.7		
1649	61.3	2/17/2005 8:18	2779.00	30.8		
1650	61.4	2/17/2005 8:23	2784.00	30.7		
1651	61.4	2/17/2005 8:28	2789.00	30.7		
1652	61.4	2/17/2005 8:33	2794.00	30.7		
1653	59.8	2/17/2005 8:38	2799.00	32.3		
1654	59.2	2/17/2005 8:43	2804.00	32.9		
1655	59.2	2/17/2005 8:48	2809.00	32.9		
1656	59.1	2/17/2005 8:53	2814.00	33.0		
1657	59.2	2/17/2005 8:58	2819.00	32.9		
1658	59.1	2/17/2005 9:03	2824.00	33.0		
1659	59.2	2/17/2005 9:08	2829.00	32.9		
1660	59.2	2/17/2005 9:13	2834.00	32.9		
1661	59.2	2/17/2005 9:18	2839.00	32.9		
1662	59.1	2/17/2005 9:23	2844.00	33.0		
1663	59.1	2/17/2005 9:28	2849.00	33.0		
1664	59.2	2/17/2005 9:33	2854.00	32.9		
1665	59.2	2/17/2005 9:38	2859.00	32.9		
1666	59.2	2/17/2005 9:43	2864.00	32.9		
1667	59.1	2/17/2005 9:48	2869.00	33.0		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
1668	59.0	2/17/2005 9:53	2874.00	33.0		
1669	59.0	2/17/2005 9:58	2879.00	33.0		
1670	59.1	2/17/2005 10:03	2884.00	32.9		
1671	59.1	2/17/2005 10:08	2889.00	32.9		
1672	59.0	2/17/2005 10:13	2894.00	33.0		
1673	59.1	2/17/2005 10:18	2899.00	32.9		
1674	59.2	2/17/2005 10:23	2904.00	32.9		
1675	59.1	2/17/2005 10:28	2909.00	33.0		
1676	59.1	2/17/2005 10:33	2914.00	33.0		
1677	59.0	2/17/2005 10:38	2919.00	33.0		
1678	59.1	2/17/2005 10:43	2924.00	32.9		
1679	59.1	2/17/2005 10:48	2929.00	32.9		
1680	59.2	2/17/2005 10:53	2934.00	32.8		
1681	59.1	2/17/2005 10:58	2939.00	32.9		
1682	59.2	2/17/2005 11:03	2944.00	32.8		
1683	59.1	2/17/2005 11:08	2949.00	32.9		
1684	59.2	2/17/2005 11:13	2954.00	32.8		
1685	59.2	2/17/2005 11:18	2959.00	32.8		
1686	59.2	2/17/2005 11:23	2964.00	32.9		
1687	59.2	2/17/2005 11:28	2969.00	32.9		
1688	59.2	2/17/2005 11:33	2974.00	32.9		
1689	59.2	2/17/2005 11:38	2979.00	32.9		
1690	59.2	2/17/2005 11:43	2984.00	32.9		
1691	59.2	2/17/2005 11:48	2989.00	32.9		
1692	59.2	2/17/2005 11:53	2994.00	32.9		
1693	59.3	2/17/2005 11:58	2999.00	32.8		
1694	59.2	2/17/2005 12:03	3004.00	32.9		
1695	59.2	2/17/2005 12:08	3009.00	32.9		
1696	59.3	2/17/2005 12:13	3014.00	32.8		
1697	59.3	2/17/2005 12:18	3019.00	32.8		
1698	59.2	2/17/2005 12:23	3024.00	32.9		
1699	59.3	2/17/2005 12:28	3029.00	32.8		
1700	59.3	2/17/2005 12:33	3034.00	32.8		
1701	59.3	2/17/2005 12:38	3039.00	32.8		
1702	59.3	2/17/2005 12:43	3044.00	32.8		
1703	59.2	2/17/2005 12:48	3049.00	32.9		
1704	59.3	2/17/2005 12:53	3054.00	32.8		
1705	59.2	2/17/2005 12:58	3059.00	32.9		
1706	59.2	2/17/2005 13:03	3064.00	32.9		
1707	59.2	2/17/2005 13:08	3069.00	32.9		
1708	59.2	2/17/2005 13:13	3074.00	32.9		
1709	59.3	2/17/2005 13:18	3079.00	32.8		
1710	59.1	2/17/2005 13:23	3084.00	32.9		
1711	59.1	2/17/2005 13:28	3089.00	32.9		
1712	59.1	2/17/2005 13:33	3094.00	32.9		
1713	59.1	2/17/2005 13:38	3099.00	32.9		
1714	59.1	2/17/2005 13:43	3104.00	32.9		
1715	59.1	2/17/2005 13:48	3109.00	32.9		
1716	59.1	2/17/2005 13:53	3114.00	32.9		
1717	59.1	2/17/2005 13:58	3119.00	32.9		
1718	59.2	2/17/2005 14:03	3124.00	32.8		

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
1719	59.2	2/17/2005 14:08	3129.00	32.9		
1720	59.1	2/17/2005 14:13	3134.00	33.0		
1721	59.2	2/17/2005 14:18	3139.00	32.9		
1722	59.1	2/17/2005 14:23	3144.00	32.9		
1723	59.2	2/17/2005 14:28	3149.00	32.8		
1724	59.2	2/17/2005 14:33	3154.00	32.8		
1725	59.1	2/17/2005 14:38	3159.00	33.0		
1726	59.1	2/17/2005 14:43	3164.00	33.0		
1727	59.1	2/17/2005 14:48	3169.00	33.0		
1728	59.2	2/17/2005 14:53	3174.00	32.9	Time Pumping Stopped	
1729	59.2	2/17/2005 14:58	3179.00	32.9	2/17/2005 15:05	
1730	59.2	2/17/2005 15:03	3184.00	32.9		
	Manual		3185.00	16.0	1	3185
	Measurements		3186.00	7.4	2	1593
			3187.00	4.2	3	1062
1731	90.2	2/17/2005 15:08	3189.00	1.8	3.92	814
1732	90.6	2/17/2005 15:13	3194.00	1.5	8.92	358
1733	90.7	2/17/2005 15:18	3199.00	1.3	13.92	230
1734	90.8	2/17/2005 15:23	3204.00	1.3	18.92	169
1735	90.9	2/17/2005 15:28	3209.00	1.2	23.92	134
1736	90.9	2/17/2005 15:33	3214.00	1.2	28.92	111
1737	91.0	2/17/2005 15:38	3219.00	1.0	33.92	94.9
1738	91.1	2/17/2005 15:43	3224.00	0.9	38.92	82.8
1739	91.1	2/17/2005 15:48	3229.00	0.9	43.92	73.5
1740	91.1	2/17/2005 15:53	3234.00	1.0	48.92	66.1
1741	91.2	2/17/2005 15:58	3239.00	0.8	53.92	60.1
1742	91.2	2/17/2005 16:03	3244.00	0.8	58.92	55.1
1743	91.2	2/17/2005 16:08	3249.00	0.8	63.92	50.8
1744	91.2	2/17/2005 16:13	3254.00	0.8	68.92	47.2
1745	91.2	2/17/2005 16:18	3259.00	0.8	73.92	44.1
1746	91.3	2/17/2005 16:23	3264.00	0.7	78.92	41.4
1747	91.3	2/17/2005 16:28	3269.00	0.7	83.92	39.0
1748	91.3	2/17/2005 16:33	3274.00	0.7	88.92	36.8
1749	91.2	2/17/2005 16:38	3279.00	0.8	93.92	34.9
1750	91.3	2/17/2005 16:43	3284.00	0.7	98.92	33.2
1751	91.3	2/17/2005 16:48	3289.00	0.7	103.92	31.7
1752	91.3	2/17/2005 16:53	3294.00	0.7	108.92	30.2
1753	91.3	2/17/2005 16:58	3299.00	0.7	113.92	29.0
1754	91.3	2/17/2005 17:03	3304.00	0.7	118.92	27.8
1755	91.3	2/17/2005 17:08	3309.00	0.7	123.92	26.7
1756	91.4	2/17/2005 17:13	3314.00	0.6	128.92	25.7
1757	91.4	2/17/2005 17:18	3319.00	0.6	133.92	24.8
1758	91.4	2/17/2005 17:23	3324.00	0.6	138.92	23.9
1759	91.3	2/17/2005 17:28	3329.00	0.7	143.92	23.1
1760	91.4	2/17/2005 17:33	3334.00	0.6	148.92	22.4
1761	91.4	2/17/2005 17:38	3339.00	0.6	153.92	21.7
1762	91.4	2/17/2005 17:43	3344.00	0.6	158.92	21.0
1763	91.4	2/17/2005 17:48	3349.00	0.6	163.92	20.4
1764	91.4	2/17/2005 17:53	3354.00	0.6	168.92	19.9
1765	91.3	2/17/2005 17:58	3359.00	0.7	173.92	19.3
1766	91.3	2/17/2005 18:03	3364.00	0.7	178.92	18.8

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began</b>	<b>Barometrically Corrected Drawdown</b>	<b>Time Since Pumping Stopped</b>	<b>t/t'</b>
	<b>(ft)</b>		<b>(minutes)</b>	<b>(ft)</b>	<b>(minutes)</b>	
1767	91.4	2/17/2005 18:08	3369.00	0.6	183.92	18.3
1768	91.5	2/17/2005 18:13	3374.00	0.5	188.92	17.9
1769	91.4	2/17/2005 18:18	3379.00	0.6	193.92	17.4
1770	91.4	2/17/2005 18:23	3384.00	0.6	198.92	17.0
1771	91.4	2/17/2005 18:28	3389.00	0.6	203.92	16.6
1772	91.4	2/17/2005 18:33	3394.00	0.6	208.92	16.2
1773	91.5	2/17/2005 18:38	3399.00	0.5	213.92	15.9
1774	91.5	2/17/2005 18:43	3404.00	0.5	218.92	15.5
1775	91.5	2/17/2005 18:48	3409.00	0.5	223.92	15.2
1776	91.5	2/17/2005 18:53	3414.00	0.5	228.92	14.9
1777	91.5	2/17/2005 18:58	3419.00	0.5	233.92	14.6
1778	91.5	2/17/2005 19:03	3424.00	0.5	238.92	14.3
1779	91.5	2/17/2005 19:08	3429.00	0.5	243.92	14.1
1780	91.5	2/17/2005 19:13	3434.00	0.5	248.92	13.8
1781	91.5	2/17/2005 19:18	3439.00	0.5	253.92	13.5
1782	91.5	2/17/2005 19:23	3444.00	0.5	258.92	13.3
1783	91.5	2/17/2005 19:28	3449.00	0.5	263.92	13.1
1784	91.5	2/17/2005 19:33	3454.00	0.5	268.92	12.8
1785	91.5	2/17/2005 19:38	3459.00	0.5	273.92	12.6
1786	91.5	2/17/2005 19:43	3464.00	0.5	278.92	12.4
1787	91.5	2/17/2005 19:48	3469.00	0.5	283.92	12.2
1788	91.5	2/17/2005 19:53	3474.00	0.5	288.92	12.0
1789	91.5	2/17/2005 19:58	3479.00	0.5	293.92	11.8
1790	91.5	2/17/2005 20:03	3484.00	0.5	298.92	11.7
1791	91.5	2/17/2005 20:08	3489.00	0.5	303.92	11.5
1792	91.5	2/17/2005 20:13	3494.00	0.5	308.92	11.3
1793	91.5	2/17/2005 20:18	3499.00	0.5	313.92	11.1
1794	91.6	2/17/2005 20:23	3504.00	0.5	318.92	11.0
1795	91.6	2/17/2005 20:28	3509.00	0.5	323.92	10.8
1796	91.6	2/17/2005 20:33	3514.00	0.5	328.92	10.7
1797	91.6	2/17/2005 20:38	3519.00	0.5	333.92	10.5
1798	91.6	2/17/2005 20:43	3524.00	0.5	338.92	10.4
1799	91.6	2/17/2005 20:48	3529.00	0.5	343.92	10.3
1800	91.6	2/17/2005 20:53	3534.00	0.5	348.92	10.1
1801	91.7	2/17/2005 20:58	3539.00	0.4	353.92	10.0
1802	91.7	2/17/2005 21:03	3544.00	0.4	358.92	9.9
1803	91.6	2/17/2005 21:08	3549.00	0.5	363.92	9.8
1804	91.6	2/17/2005 21:13	3554.00	0.5	368.92	9.6
1805	91.7	2/17/2005 21:18	3559.00	0.4	373.92	9.5
1806	91.6	2/17/2005 21:23	3564.00	0.4	378.92	9.4
1807	91.6	2/17/2005 21:28	3569.00	0.4	383.92	9.3
1808	91.6	2/17/2005 21:33	3574.00	0.4	388.92	9.2
1809	91.6	2/17/2005 21:38	3579.00	0.5	393.92	9.1
1810	91.7	2/17/2005 21:43	3584.00	0.4	398.92	9.0
1811	91.6	2/17/2005 21:48	3589.00	0.5	403.92	8.9
1812	91.6	2/17/2005 21:53	3594.00	0.5	408.92	8.8
1813	91.6	2/17/2005 21:58	3599.00	0.5	413.92	8.7
1814	91.6	2/17/2005 22:03	3604.00	0.5	418.92	8.6
1815	91.6	2/17/2005 22:08	3609.00	0.5	423.92	8.5
1816	91.7	2/17/2005 22:13	3614.00	0.4	428.92	8.4
1817	91.7	2/17/2005 22:18	3619.00	0.4	433.92	8.3

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1818	91.6	2/17/2005 22:23	3624.00	0.5	438.92	8.3
1819	91.7	2/17/2005 22:28	3629.00	0.4	443.92	8.2
1820	91.6	2/17/2005 22:33	3634.00	0.5	448.92	8.1
1821	91.6	2/17/2005 22:38	3639.00	0.5	453.92	8.0
1822	91.7	2/17/2005 22:43	3644.00	0.4	458.92	7.9
1823	91.7	2/17/2005 22:48	3649.00	0.4	463.92	7.9
1824	91.7	2/17/2005 22:53	3654.00	0.4	468.92	7.8
1825	91.7	2/17/2005 22:58	3659.00	0.4	473.92	7.7
1826	91.6	2/17/2005 23:03	3664.00	0.5	478.92	7.7
1827	91.7	2/17/2005 23:08	3669.00	0.4	483.92	7.6
1828	91.6	2/17/2005 23:13	3674.00	0.5	488.92	7.5
1829	91.6	2/17/2005 23:18	3679.00	0.5	493.92	7.4
1830	91.6	2/17/2005 23:23	3684.00	0.5	498.92	7.4
1831	91.6	2/17/2005 23:28	3689.00	0.5	503.92	7.3
1832	91.6	2/17/2005 23:33	3694.00	0.5	508.92	7.3
1833	91.7	2/17/2005 23:38	3699.00	0.4	513.92	7.2
1834	91.6	2/17/2005 23:43	3704.00	0.5	518.92	7.1
1835	91.6	2/17/2005 23:48	3709.00	0.5	523.92	7.1
1836	91.6	2/17/2005 23:53	3714.00	0.5	528.92	7.0
1837	91.6	2/17/2005 23:58	3719.00	0.5	533.92	7.0
1838	91.7	2/18/2005 0:03	3724.00	0.4	538.92	6.9
1839	91.7	2/18/2005 0:08	3729.00	0.4	543.92	6.9
1840	91.7	2/18/2005 0:13	3734.00	0.4	548.92	6.8
1841	91.7	2/18/2005 0:18	3739.00	0.4	553.92	6.8
1842	91.6	2/18/2005 0:23	3744.00	0.5	558.92	6.7
1843	91.7	2/18/2005 0:28	3749.00	0.4	563.92	6.6
1844	91.7	2/18/2005 0:33	3754.00	0.4	568.92	6.6
1845	91.7	2/18/2005 0:38	3759.00	0.4	573.92	6.5
1846	91.7	2/18/2005 0:43	3764.00	0.4	578.92	6.5
1847	91.6	2/18/2005 0:48	3769.00	0.5	583.92	6.5
1848	91.7	2/18/2005 0:53	3774.00	0.4	588.92	6.4
1849	91.7	2/18/2005 0:58	3779.00	0.4	593.92	6.4
1850	91.7	2/18/2005 1:03	3784.00	0.4	598.92	6.3
1851	91.7	2/18/2005 1:08	3789.00	0.4	603.92	6.3
1852	91.7	2/18/2005 1:13	3794.00	0.4	608.92	6.2
1853	91.7	2/18/2005 1:18	3799.00	0.4	613.92	6.2
1854	91.7	2/18/2005 1:23	3804.00	0.4	618.92	6.1
1855	91.7	2/18/2005 1:28	3809.00	0.4	623.92	6.1
1856	91.7	2/18/2005 1:33	3814.00	0.4	628.92	6.1
1857	91.7	2/18/2005 1:38	3819.00	0.4	633.92	6.0
1858	91.7	2/18/2005 1:43	3824.00	0.4	638.92	6.0
1859	91.7	2/18/2005 1:48	3829.00	0.4	643.92	5.9
1860	91.7	2/18/2005 1:53	3834.00	0.4	648.92	5.9
1861	91.7	2/18/2005 1:58	3839.00	0.4	653.92	5.9
1862	91.7	2/18/2005 2:03	3844.00	0.4	658.92	5.8
1863	91.7	2/18/2005 2:08	3849.00	0.4	663.92	5.8
1864	91.8	2/18/2005 2:13	3854.00	0.3	668.92	5.8
1865	91.7	2/18/2005 2:18	3859.00	0.4	673.92	5.7
1866	91.7	2/18/2005 2:23	3864.00	0.4	678.92	5.7
1867	91.7	2/18/2005 2:28	3869.00	0.4	683.92	5.7
1868	91.7	2/18/2005 2:33	3874.00	0.4	688.92	5.6

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1869	91.8	2/18/2005 2:38	3879.00	0.3	693.92	5.6
1870	91.8	2/18/2005 2:43	3884.00	0.3	698.92	5.6
1871	91.7	2/18/2005 2:48	3889.00	0.4	703.92	5.5
1872	91.8	2/18/2005 2:53	3894.00	0.3	708.92	5.5
1873	91.8	2/18/2005 2:58	3899.00	0.3	713.92	5.5
1874	91.7	2/18/2005 3:03	3904.00	0.4	718.92	5.4
1875	91.8	2/18/2005 3:08	3909.00	0.3	723.92	5.4
1876	91.7	2/18/2005 3:13	3914.00	0.4	728.92	5.4
1877	91.8	2/18/2005 3:18	3919.00	0.3	733.92	5.3
1878	91.7	2/18/2005 3:23	3924.00	0.4	738.92	5.3
1879	91.8	2/18/2005 3:28	3929.00	0.3	743.92	5.3
1880	91.8	2/18/2005 3:33	3934.00	0.3	748.92	5.3
1881	91.8	2/18/2005 3:38	3939.00	0.3	753.92	5.2
1882	91.8	2/18/2005 3:43	3944.00	0.3	758.92	5.2
1883	91.8	2/18/2005 3:48	3949.00	0.3	763.92	5.2
1884	91.7	2/18/2005 3:53	3954.00	0.3	768.92	5.1
1885	91.8	2/18/2005 3:58	3959.00	0.2	773.92	5.1
1886	91.8	2/18/2005 4:03	3964.00	0.2	778.92	5.1
1887	91.7	2/18/2005 4:08	3969.00	0.3	783.92	5.1
1888	91.7	2/18/2005 4:13	3974.00	0.3	788.92	5.0
1889	91.7	2/18/2005 4:18	3979.00	0.3	793.92	5.0
1890	91.7	2/18/2005 4:23	3984.00	0.3	798.92	5.0
1891	91.7	2/18/2005 4:28	3989.00	0.3	803.92	5.0
1892	91.7	2/18/2005 4:33	3994.00	0.3	808.92	4.9
1893	91.7	2/18/2005 4:38	3999.00	0.3	813.92	4.9
1894	91.7	2/18/2005 4:43	4004.00	0.3	818.92	4.9
1895	91.8	2/18/2005 4:48	4009.00	0.2	823.92	4.9
1896	91.8	2/18/2005 4:53	4014.00	0.2	828.92	4.8
1897	91.8	2/18/2005 4:58	4019.00	0.2	833.92	4.8
1898	91.8	2/18/2005 5:03	4024.00	0.2	838.92	4.8
1899	91.7	2/18/2005 5:08	4029.00	0.3	843.92	4.8
1900	91.7	2/18/2005 5:13	4034.00	0.3	848.92	4.8
1901	91.8	2/18/2005 5:18	4039.00	0.2	853.92	4.7
1902	91.7	2/18/2005 5:23	4044.00	0.3	858.92	4.7
1903	91.8	2/18/2005 5:28	4049.00	0.2	863.92	4.7
1904	91.8	2/18/2005 5:33	4054.00	0.2	868.92	4.7
1905	91.7	2/18/2005 5:38	4059.00	0.3	873.92	4.6
1906	91.8	2/18/2005 5:43	4064.00	0.2	878.92	4.6
1907	91.7	2/18/2005 5:48	4069.00	0.3	883.92	4.6
1908	91.8	2/18/2005 5:53	4074.00	0.2	888.92	4.6
1909	91.8	2/18/2005 5:58	4079.00	0.2	893.92	4.6
1910	91.9	2/18/2005 6:03	4084.00	0.1	898.92	4.5
1911	91.8	2/18/2005 6:08	4089.00	0.2	903.92	4.5
1912	91.8	2/18/2005 6:13	4094.00	0.2	908.92	4.5
1913	91.8	2/18/2005 6:18	4099.00	0.2	913.92	4.5
1914	91.8	2/18/2005 6:23	4104.00	0.3	918.92	4.5
1915	91.8	2/18/2005 6:28	4109.00	0.3	923.92	4.4
1916	91.8	2/18/2005 6:33	4114.00	0.3	928.92	4.4
1917	91.8	2/18/2005 6:38	4119.00	0.2	933.92	4.4

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
1918	91.8	2/18/2005 6:43	4124.00	0.2	938.92	4.4
1919	91.9	2/18/2005 6:48	4129.00	0.1	943.92	4.4
1920	91.9	2/18/2005 6:53	4134.00	0.2	948.92	4.4
1921	91.9	2/18/2005 6:58	4139.00	0.2	953.92	4.3
1922	91.9	2/18/2005 7:03	4144.00	0.2	958.92	4.3
1923	92.0	2/18/2005 7:08	4149.00	0.1	963.92	4.3
1924	91.9	2/18/2005 7:13	4154.00	0.2	968.92	4.3
1925	91.9	2/18/2005 7:18	4159.00	0.2	973.92	4.3
1926	92.0	2/18/2005 7:23	4164.00	0.1	978.92	4.3
1927	92.0	2/18/2005 7:28	4169.00	0.1	983.92	4.2
1928	92.0	2/18/2005 7:33	4174.00	0.1	988.92	4.2
1929	92.0	2/18/2005 7:38	4179.00	0.1	993.92	4.2
1930	91.9	2/18/2005 7:43	4184.00	0.2	998.92	4.2
1931	91.9	2/18/2005 7:48	4189.00	0.2	1003.92	4.2
1932	91.9	2/18/2005 7:53	4194.00	0.2	1008.92	4.2
1933	92.0	2/18/2005 7:58	4199.00	0.1	1013.92	4.1
1934	91.9	2/18/2005 8:03	4204.00	0.2	1018.92	4.1
1935	92.0	2/18/2005 8:08	4209.00	0.1	1023.92	4.1
1936	91.9	2/18/2005 8:13	4214.00	0.2	1028.92	4.1
1937	92.0	2/18/2005 8:18	4219.00	0.1	1033.92	4.1
1938	91.9	2/18/2005 8:23	4224.00	0.2	1038.92	4.1
1939	91.9	2/18/2005 8:28	4229.00	0.2	1043.92	4.1
1940	92.0	2/18/2005 8:33	4234.00	0.1	1048.92	4.0
1941	91.9	2/18/2005 8:38	4239.00	0.2	1053.92	4.0
1942	91.9	2/18/2005 8:43	4244.00	0.2	1058.92	4.0
1943	92.0	2/18/2005 8:48	4249.00	0.1	1063.92	4.0
1944	91.9	2/18/2005 8:53	4254.00	0.1	1068.92	4.0
1945	91.9	2/18/2005 8:58	4259.00	0.1	1073.92	4.0
1946	91.9	2/18/2005 9:03	4264.00	0.1	1078.92	4.0
1947	92.0	2/18/2005 9:08	4269.00	0.1	1083.92	3.9
1948	92.0	2/18/2005 9:13	4274.00	0.1	1088.92	3.9
1949	92.0	2/18/2005 9:18	4279.00	0.1	1093.92	3.9
1950	91.9	2/18/2005 9:23	4284.00	0.2	1098.92	3.9
1951	92.0	2/18/2005 9:28	4289.00	0.1	1103.92	3.9
1952	92.0	2/18/2005 9:33	4294.00	0.1	1108.92	3.9
1953	91.9	2/18/2005 9:38	4299.00	0.1	1113.92	3.9
1954	91.9	2/18/2005 9:43	4304.00	0.1	1118.92	3.8
1955	91.9	2/18/2005 9:48	4309.00	0.1	1123.92	3.8
1956	92.0	2/18/2005 9:53	4314.00	0.1	1128.92	3.8
1957	92.0	2/18/2005 9:58	4319.00	0.1	1133.92	3.8
1958	92.0	2/18/2005 10:03	4324.00	0.1	1138.92	3.8
1959	91.9	2/18/2005 10:08	4329.00	0.1	1143.92	3.8
1960	91.9	2/18/2005 10:13	4334.00	0.1	1148.92	3.8
1961	91.9	2/18/2005 10:18	4339.00	0.1	1153.92	3.8
1962	91.9	2/18/2005 10:23	4344.00	0.1	1158.92	3.7
1963	91.9	2/18/2005 10:28	4349.00	0.1	1163.92	3.7
1964	91.9	2/18/2005 10:33	4354.00	0.1	1168.92	3.7
1965	91.9	2/18/2005 10:38	4359.00	0.1	1173.92	3.7
1966	91.9	2/18/2005 10:43	4364.00	0.1	1178.92	3.7
1967	91.9	2/18/2005 10:48	4369.00	0.1	1183.92	3.7
1968	91.9	2/18/2005 10:53	4374.00	0.1	1188.92	3.7

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began</b>	<b>Barometrically Corrected Drawdown</b>	<b>Time Since Pumping Stopped</b>	<b>t/t'</b>
	<b>(ft)</b>		<b>(minutes)</b>	<b>(ft)</b>	<b>(minutes)</b>	
1969	91.9	2/18/2005 10:58	4379.00	0.1	1193.92	3.7
1970	91.9	2/18/2005 11:03	4384.00	0.1	1198.92	3.7
1971	91.8	2/18/2005 11:08	4389.00	0.2	1203.92	3.6
1972	91.9	2/18/2005 11:13	4394.00	0.1	1208.92	3.6
1973	91.9	2/18/2005 11:18	4399.00	0.1	1213.92	3.6
1974	91.9	2/18/2005 11:23	4404.00	0.1	1218.92	3.6
1975	92.0	2/18/2005 11:28	4409.00	0.0	1223.92	3.6
1976	91.9	2/18/2005 11:33	4414.00	0.1	1228.92	3.6
1977	91.9	2/18/2005 11:38	4419.00	0.1	1233.92	3.6
1978	91.9	2/18/2005 11:43	4424.00	0.1	1238.92	3.6
1979	91.9	2/18/2005 11:48	4429.00	0.1	1243.92	3.6
1980	91.9	2/18/2005 11:53	4434.00	0.1	1248.92	3.6
1981	91.9	2/18/2005 11:58	4439.00	0.1	1253.92	3.5
1982	91.9	2/18/2005 12:03	4444.00	0.1	1258.92	3.5
1983	91.9	2/18/2005 12:08	4449.00	0.1	1263.92	3.5
1984	91.9	2/18/2005 12:13	4454.00	0.1	1268.92	3.5
1985	92.0	2/18/2005 12:18	4459.00	0.0	1273.92	3.5
1986	91.9	2/18/2005 12:23	4464.00	0.1	1278.92	3.5
1987	91.9	2/18/2005 12:28	4469.00	0.1	1283.92	3.5
1988	91.9	2/18/2005 12:33	4474.00	0.1	1288.92	3.5
1989	91.9	2/18/2005 12:38	4479.00	0.1	1293.92	3.5
1990	91.9	2/18/2005 12:43	4484.00	0.1	1298.92	3.5
1991	91.9	2/18/2005 12:48	4489.00	0.1	1303.92	3.4
1992	92.0	2/18/2005 12:53	4494.00	0.1	1308.92	3.4
1993	92.0	2/18/2005 12:58	4499.00	0.1	1313.92	3.4
1994	92.0	2/18/2005 13:03	4504.00	0.1	1318.92	3.4
1995	92.0	2/18/2005 13:08	4509.00	0.1	1323.92	3.4
1996	92.0	2/18/2005 13:13	4514.00	0.1	1328.92	3.4
1997	92.0	2/18/2005 13:18	4519.00	0.1	1333.92	3.4
1998	92.0	2/18/2005 13:23	4524.00	0.1	1338.92	3.4
1999	92.0	2/18/2005 13:28	4529.00	0.1	1343.92	3.4
2000	92.0	2/18/2005 13:33	4534.00	0.1	1348.92	3.4
2001	92.0	2/18/2005 13:38	4539.00	0.1	1353.92	3.4
2002	92.1	2/18/2005 13:43	4544.00	0.0	1358.92	3.3
2003	92.0	2/18/2005 13:48	4549.00	0.1	1363.92	3.3
2004	92.0	2/18/2005 13:53	4554.00	0.1	1368.92	3.3
2005	92.0	2/18/2005 13:58	4559.00	0.1	1373.92	3.3
2006	92.0	2/18/2005 14:03	4564.00	0.1	1378.92	3.3
2007	92.1	2/18/2005 14:08	4569.00	0.0	1383.92	3.3
2008	92.0	2/18/2005 14:13	4574.00	0.1	1388.92	3.3
2009	92.0	2/18/2005 14:18	4579.00	0.1	1393.92	3.3
2010	92.1	2/18/2005 14:23	4584.00	0.0	1398.92	3.3
2011	92.0	2/18/2005 14:28	4589.00	0.1	1403.92	3.3
2012	92.0	2/18/2005 14:33	4594.00	0.1	1408.92	3.3
2013	92.1	2/18/2005 14:38	4599.00	0.0	1413.92	3.3
2014	92.1	2/18/2005 14:43	4604.00	0.0	1418.92	3.2
2015	92.1	2/18/2005 14:48	4609.00	0.0	1423.92	3.2
2016	92.1	2/18/2005 14:53	4614.00	0.0	1428.92	3.2
2017	92.0	2/18/2005 14:58	4619.00	0.1	1433.92	3.2
2018	92.1	2/18/2005 15:03	4624.00	0.0	1438.92	3.2
2019	92.0	2/18/2005 15:08	4629.00	0.1	1443.92	3.2

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
2020	92.0	2/18/2005 15:13	4634.00	0.1	1448.92	3.2
2021	92.0	2/18/2005 15:18	4639.00	0.1	1453.92	3.2
2022	92.1	2/18/2005 15:23	4644.00	0.0	1458.92	3.2
2023	92.1	2/18/2005 15:28	4649.00	0.0	1463.92	3.2
2024	92.1	2/18/2005 15:33	4654.00	0.0	1468.92	3.2
2025	92.1	2/18/2005 15:38	4659.00	0.0	1473.92	3.2
2026	92.1	2/18/2005 15:43	4664.00	0.0	1478.92	3.2
2027	92.1	2/18/2005 15:48	4669.00	0.0	1483.92	3.1
2028	92.1	2/18/2005 15:53	4674.00	0.0	1488.92	3.1
2029	92.1	2/18/2005 15:58	4679.00	0.0	1493.92	3.1
2030	92.1	2/18/2005 16:03	4684.00	0.0	1498.92	3.1
2031	92.1	2/18/2005 16:08	4689.00	0.0	1503.92	3.1
2032	92.1	2/18/2005 16:13	4694.00	0.0	1508.92	3.1
2033	92.1	2/18/2005 16:18	4699.00	0.0	1513.92	3.1
2034	92.1	2/18/2005 16:23	4704.00	0.0	1518.92	3.1
2035	92.1	2/18/2005 16:28	4709.00	0.0	1523.92	3.1
2036	92.1	2/18/2005 16:33	4714.00	0.0	1528.92	3.1
2037	92.1	2/18/2005 16:38	4719.00	0.0	1533.92	3.1
2038	92.1	2/18/2005 16:43	4724.00	0.0	1538.92	3.1
2039	92.1	2/18/2005 16:48	4729.00	0.0	1543.92	3.1
2040	92.1	2/18/2005 16:53	4734.00	0.0	1548.92	3.1
2041	92.1	2/18/2005 16:58	4739.00	0.0	1553.92	3.0
2042	92.1	2/18/2005 17:03	4744.00	0.0	1558.92	3.0
2043	92.1	2/18/2005 17:08	4749.00	0.0	1563.92	3.0
2044	92.1	2/18/2005 17:13	4754.00	0.0	1568.92	3.0
2045	92.1	2/18/2005 17:18	4759.00	0.0	1573.92	3.0
2046	92.1	2/18/2005 17:23	4764.00	0.0	1578.92	3.0
2047	92.2	2/18/2005 17:28	4769.00	-0.1	1583.92	3.0
2048	92.1	2/18/2005 17:33	4774.00	0.0	1588.92	3.0
2049	92.1	2/18/2005 17:38	4779.00	0.0	1593.92	3.0
2050	92.1	2/18/2005 17:43	4784.00	0.0	1598.92	3.0
2051	92.1	2/18/2005 17:48	4789.00	0.0	1603.92	3.0
2052	92.1	2/18/2005 17:53	4794.00	0.0	1608.92	3.0
2053	92.2	2/18/2005 17:58	4799.00	-0.1	1613.92	3.0
2054	92.1	2/18/2005 18:03	4804.00	0.0	1618.92	3.0
2055	92.2	2/18/2005 18:08	4809.00	-0.1	1623.92	3.0
2056	92.1	2/18/2005 18:13	4814.00	0.0	1628.92	3.0
2057	92.2	2/18/2005 18:18	4819.00	-0.1	1633.92	2.9
2058	92.2	2/18/2005 18:23	4824.00	-0.1	1638.92	2.9
2059	92.1	2/18/2005 18:28	4829.00	0.0	1643.92	2.9
2060	92.1	2/18/2005 18:33	4834.00	0.0	1648.92	2.9
2061	92.2	2/18/2005 18:38	4839.00	-0.1	1653.92	2.9
2062	92.2	2/18/2005 18:43	4844.00	-0.1	1658.92	2.9
2063	92.1	2/18/2005 18:48	4849.00	0.0	1663.92	2.9
2064	92.2	2/18/2005 18:53	4854.00	-0.1	1668.92	2.9
2065	92.1	2/18/2005 18:58	4859.00	0.0	1673.92	2.9
2066	92.2	2/18/2005 19:03	4864.00	-0.1	1678.92	2.9
2067	92.1	2/18/2005 19:08	4869.00	0.0	1683.92	2.9
2068	92.2	2/18/2005 19:13	4874.00	-0.1	1688.92	2.9
2069	92.2	2/18/2005 19:18	4879.00	-0.1	1693.92	2.9
2070	92.2	2/18/2005 19:23	4884.00	-0.1	1698.92	2.9

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
2071	92.2	2/18/2005 19:28	4889.00	-0.1	1703.92	2.9
2072	92.2	2/18/2005 19:33	4894.00	-0.1	1708.92	2.9
2073	92.1	2/18/2005 19:38	4899.00	-0.1	1713.92	2.9
2074	92.0	2/18/2005 19:43	4904.00	0.0	1718.92	2.9
2075	92.1	2/18/2005 19:48	4909.00	-0.1	1723.92	2.8
2076	92.1	2/18/2005 19:53	4914.00	0.0	1728.92	2.8
2077	92.2	2/18/2005 19:58	4919.00	-0.1	1733.92	2.8
2078	92.1	2/18/2005 20:03	4924.00	0.0	1738.92	2.8
2079	92.1	2/18/2005 20:08	4929.00	0.0	1743.92	2.8
2080	92.2	2/18/2005 20:13	4934.00	-0.1	1748.92	2.8
2081	92.2	2/18/2005 20:18	4939.00	-0.1	1753.92	2.8
2082	92.1	2/18/2005 20:23	4944.00	-0.1	1758.92	2.8
2083	92.0	2/18/2005 20:28	4949.00	0.0	1763.92	2.8
2084	92.1	2/18/2005 20:33	4954.00	-0.1	1768.92	2.8
2085	92.1	2/18/2005 20:38	4959.00	-0.1	1773.92	2.8
2086	92.1	2/18/2005 20:43	4964.00	-0.1	1778.92	2.8
2087	92.1	2/18/2005 20:48	4969.00	-0.1	1783.92	2.8
2088	92.1	2/18/2005 20:53	4974.00	-0.1	1788.92	2.8
2089	92.1	2/18/2005 20:58	4979.00	-0.1	1793.92	2.8
2090	92.1	2/18/2005 21:03	4984.00	-0.1	1798.92	2.8
2091	92.1	2/18/2005 21:08	4989.00	-0.1	1803.92	2.8
2092	92.1	2/18/2005 21:13	4994.00	-0.1	1808.92	2.8
2093	92.2	2/18/2005 21:18	4999.00	-0.2	1813.92	2.8
2094	92.1	2/18/2005 21:23	5004.00	-0.1	1818.92	2.8
2095	92.2	2/18/2005 21:28	5009.00	-0.2	1823.92	2.7
2096	92.2	2/18/2005 21:33	5014.00	-0.2	1828.92	2.7
2097	92.2	2/18/2005 21:38	5019.00	-0.1	1833.92	2.7
2098	92.2	2/18/2005 21:43	5024.00	-0.1	1838.92	2.7
2099	92.2	2/18/2005 21:48	5029.00	-0.1	1843.92	2.7
2100	92.2	2/18/2005 21:53	5034.00	-0.1	1848.92	2.7
2101	92.2	2/18/2005 21:58	5039.00	-0.1	1853.92	2.7
2102	92.3	2/18/2005 22:03	5044.00	-0.2	1858.92	2.7
2103	92.1	2/18/2005 22:08	5049.00	-0.1	1863.92	2.7
2104	92.1	2/18/2005 22:13	5054.00	-0.1	1868.92	2.7
2105	92.1	2/18/2005 22:18	5059.00	-0.1	1873.92	2.7
2106	92.1	2/18/2005 22:23	5064.00	-0.1	1878.92	2.7
2107	92.1	2/18/2005 22:28	5069.00	-0.1	1883.92	2.7
2108	92.2	2/18/2005 22:33	5074.00	-0.2	1888.92	2.7
2109	92.2	2/18/2005 22:38	5079.00	-0.1	1893.92	2.7
2110	92.2	2/18/2005 22:43	5084.00	-0.1	1898.92	2.7
2111	92.2	2/18/2005 22:48	5089.00	-0.1	1903.92	2.7
2112	92.1	2/18/2005 22:53	5094.00	-0.1	1908.92	2.7
2113	92.1	2/18/2005 22:58	5099.00	-0.1	1913.92	2.7
2114	92.1	2/18/2005 23:03	5104.00	-0.1	1918.92	2.7
2115	92.1	2/18/2005 23:08	5109.00	-0.1	1923.92	2.7
2116	92.2	2/18/2005 23:13	5114.00	-0.2	1928.92	2.7
2117	92.1	2/18/2005 23:18	5119.00	-0.1	1933.92	2.6
2118	92.1	2/18/2005 23:23	5124.00	0.0	1938.92	2.6
2119	92.2	2/18/2005 23:28	5129.00	-0.1	1943.92	2.6
2120	92.2	2/18/2005 23:33	5134.00	-0.1	1948.92	2.6
2121	92.3	2/18/2005 23:38	5139.00	-0.2	1953.92	2.6

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
2122	92.2	2/18/2005 23:43	5144.00	-0.1	1958.92	2.6
2123	92.2	2/18/2005 23:48	5149.00	-0.1	1963.92	2.6
2124	92.2	2/18/2005 23:53	5154.00	-0.1	1968.92	2.6
2125	92.3	2/18/2005 23:58	5159.00	-0.2	1973.92	2.6
2126	92.2	2/19/2005 0:03	5164.00	-0.1	1978.92	2.6
2127	92.3	2/19/2005 0:08	5169.00	-0.2	1983.92	2.6
2128	92.3	2/19/2005 0:13	5174.00	-0.2	1988.92	2.6
2129	92.2	2/19/2005 0:18	5179.00	-0.1	1993.92	2.6
2130	92.3	2/19/2005 0:23	5184.00	-0.2	1998.92	2.6
2131	92.3	2/19/2005 0:28	5189.00	-0.2	2003.92	2.6
2132	92.2	2/19/2005 0:33	5194.00	-0.1	2008.92	2.6
2133	92.3	2/19/2005 0:38	5199.00	-0.2	2013.92	2.6
2134	92.2	2/19/2005 0:43	5204.00	-0.1	2018.92	2.6
2135	92.3	2/19/2005 0:48	5209.00	-0.2	2023.92	2.6
2136	92.3	2/19/2005 0:53	5214.00	-0.2	2028.92	2.6
2137	92.3	2/19/2005 0:58	5219.00	-0.2	2033.92	2.6
2138	92.2	2/19/2005 1:03	5224.00	-0.1	2038.92	2.6
2139	92.3	2/19/2005 1:08	5229.00	-0.2	2043.92	2.6
2140	92.3	2/19/2005 1:13	5234.00	-0.2	2048.92	2.6
2141	92.1	2/19/2005 1:18	5239.00	0.0	2053.92	2.6
2142	92.3	2/19/2005 1:23	5244.00	-0.2	2058.92	2.5
2143	92.3	2/19/2005 1:28	5249.00	-0.2	2063.92	2.5
2144	92.3	2/19/2005 1:33	5254.00	-0.2	2068.92	2.5
2145	92.3	2/19/2005 1:38	5259.00	-0.2	2073.92	2.5
2146	92.2	2/19/2005 1:43	5264.00	-0.1	2078.92	2.5
2147	92.3	2/19/2005 1:48	5269.00	-0.2	2083.92	2.5
2148	92.3	2/19/2005 1:53	5274.00	-0.2	2088.92	2.5
2149	92.3	2/19/2005 1:58	5279.00	-0.2	2093.92	2.5
2150	92.3	2/19/2005 2:03	5284.00	-0.2	2098.92	2.5
2151	92.3	2/19/2005 2:08	5289.00	-0.2	2103.92	2.5
2152	92.2	2/19/2005 2:13	5294.00	-0.1	2108.92	2.5
2153	92.2	2/19/2005 2:18	5299.00	-0.1	2113.92	2.5
2154	92.3	2/19/2005 2:23	5304.00	-0.2	2118.92	2.5
2155	92.3	2/19/2005 2:28	5309.00	-0.2	2123.92	2.5
2156	92.2	2/19/2005 2:33	5314.00	-0.1	2128.92	2.5
2157	92.2	2/19/2005 2:38	5319.00	-0.1	2133.92	2.5
2158	92.2	2/19/2005 2:43	5324.00	-0.1	2138.92	2.5
2159	92.3	2/19/2005 2:48	5329.00	-0.2	2143.92	2.5
2160	92.3	2/19/2005 2:53	5334.00	-0.2	2148.92	2.5
2161	92.2	2/19/2005 2:58	5339.00	-0.1	2153.92	2.5
2162	92.2	2/19/2005 3:03	5344.00	-0.1	2158.92	2.5
2163	92.2	2/19/2005 3:08	5349.00	-0.1	2163.92	2.5
2164	92.2	2/19/2005 3:13	5354.00	-0.1	2168.92	2.5
2165	92.2	2/19/2005 3:18	5359.00	-0.1	2173.92	2.5
2166	92.2	2/19/2005 3:23	5364.00	-0.1	2178.92	2.5
2167	92.2	2/19/2005 3:28	5369.00	-0.1	2183.92	2.5
2168	92.2	2/19/2005 3:33	5374.00	-0.1	2188.92	2.5
2169	92.3	2/19/2005 3:38	5379.00	-0.2	2193.92	2.5
2170	92.3	2/19/2005 3:43	5384.00	-0.2	2198.92	2.4
2171	92.2	2/19/2005 3:48	5389.00	-0.1	2203.92	2.4
2172	92.2	2/19/2005 3:53	5394.00	-0.1	2208.92	2.4

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
2173	92.3	2/19/2005 3:58	5399.00	-0.3	2213.92	2.4
2174	92.2	2/19/2005 4:03	5404.00	-0.1	2218.92	2.4
2175	92.3	2/19/2005 4:08	5409.00	-0.2	2223.92	2.4
2176	92.3	2/19/2005 4:13	5414.00	-0.2	2228.92	2.4
2177	92.2	2/19/2005 4:18	5419.00	-0.1	2233.92	2.4
2178	92.3	2/19/2005 4:23	5424.00	-0.3	2238.92	2.4
2179	92.2	2/19/2005 4:28	5429.00	-0.1	2243.92	2.4
2180	92.3	2/19/2005 4:33	5434.00	-0.3	2248.92	2.4
2181	92.3	2/19/2005 4:38	5439.00	-0.2	2253.92	2.4
2182	92.3	2/19/2005 4:43	5444.00	-0.2	2258.92	2.4
2183	92.3	2/19/2005 4:48	5449.00	-0.2	2263.92	2.4
2184	92.2	2/19/2005 4:53	5454.00	-0.1	2268.92	2.4
2185	92.3	2/19/2005 4:58	5459.00	-0.3	2273.92	2.4
2186	92.3	2/19/2005 5:03	5464.00	-0.3	2278.92	2.4
2187	92.3	2/19/2005 5:08	5469.00	-0.2	2283.92	2.4
2188	92.2	2/19/2005 5:13	5474.00	-0.1	2288.92	2.4
2189	92.3	2/19/2005 5:18	5479.00	-0.2	2293.92	2.4
2190	92.3	2/19/2005 5:23	5484.00	-0.2	2298.92	2.4
2191	92.3	2/19/2005 5:28	5489.00	-0.2	2303.92	2.4
2192	92.3	2/19/2005 5:33	5494.00	-0.2	2308.92	2.4
2193	92.3	2/19/2005 5:38	5499.00	-0.2	2313.92	2.4
2194	92.2	2/19/2005 5:43	5504.00	-0.1	2318.92	2.4
2195	92.2	2/19/2005 5:48	5509.00	-0.1	2323.92	2.4
2196	92.3	2/19/2005 5:53	5514.00	-0.2	2328.92	2.4
2197	92.3	2/19/2005 5:58	5519.00	-0.2	2333.92	2.4
2198	92.3	2/19/2005 6:03	5524.00	-0.2	2338.92	2.4
2199	92.3	2/19/2005 6:08	5529.00	-0.2	2343.92	2.4
2200	92.3	2/19/2005 6:13	5534.00	-0.2	2348.92	2.4
2201	92.2	2/19/2005 6:18	5539.00	-0.1	2353.92	2.4
2202	92.3	2/19/2005 6:23	5544.00	-0.2	2358.92	2.4
2203	92.3	2/19/2005 6:28	5549.00	-0.2	2363.92	2.3
2204	92.3	2/19/2005 6:33	5554.00	-0.2	2368.92	2.3
2205	92.3	2/19/2005 6:38	5559.00	-0.2	2373.92	2.3
2206	92.3	2/19/2005 6:43	5564.00	-0.2	2378.92	2.3
2207	92.3	2/19/2005 6:48	5569.00	-0.2	2383.92	2.3
2208	92.3	2/19/2005 6:53	5574.00	-0.2	2388.92	2.3
2209	92.3	2/19/2005 6:58	5579.00	-0.2	2393.92	2.3
2210	92.3	2/19/2005 7:03	5584.00	-0.2	2398.92	2.3
2211	92.3	2/19/2005 7:08	5589.00	-0.2	2403.92	2.3
2212	92.3	2/19/2005 7:13	5594.00	-0.2	2408.92	2.3
2213	92.3	2/19/2005 7:18	5599.00	-0.2	2413.92	2.3
2214	92.3	2/19/2005 7:23	5604.00	-0.2	2418.92	2.3
2215	92.3	2/19/2005 7:28	5609.00	-0.2	2423.92	2.3
2216	92.3	2/19/2005 7:33	5614.00	-0.2	2428.92	2.3
2217	92.3	2/19/2005 7:38	5619.00	-0.2	2433.92	2.3
2218	92.3	2/19/2005 7:43	5624.00	-0.2	2438.92	2.3
2219	92.3	2/19/2005 7:48	5629.00	-0.2	2443.92	2.3
2220	92.3	2/19/2005 7:53	5634.00	-0.2	2448.92	2.3
2221	92.3	2/19/2005 7:58	5639.00	-0.2	2453.92	2.3
2222	92.3	2/19/2005 8:03	5644.00	-0.2	2458.92	2.3
2223	92.3	2/19/2005 8:08	5649.00	-0.2	2463.92	2.3

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
2224	92.3	2/19/2005 8:13	5654.00	-0.2	2468.92	2.3
2225	92.3	2/19/2005 8:18	5659.00	-0.2	2473.92	2.3
2226	92.3	2/19/2005 8:23	5664.00	-0.2	2478.92	2.3
2227	92.3	2/19/2005 8:28	5669.00	-0.2	2483.92	2.3
2228	92.3	2/19/2005 8:33	5674.00	-0.2	2488.92	2.3
2229	92.3	2/19/2005 8:38	5679.00	-0.2	2493.92	2.3
2230	92.4	2/19/2005 8:43	5684.00	-0.3	2498.92	2.3
2231	92.3	2/19/2005 8:48	5689.00	-0.2	2503.92	2.3
2232	92.3	2/19/2005 8:53	5694.00	-0.2	2508.92	2.3
2233	92.3	2/19/2005 8:58	5699.00	-0.2	2513.92	2.3
2234	92.3	2/19/2005 9:03	5704.00	-0.2	2518.92	2.3
2235	92.2	2/19/2005 9:08	5709.00	-0.2	2523.92	2.3
2236	92.2	2/19/2005 9:13	5714.00	-0.2	2528.92	2.3
2237	92.2	2/19/2005 9:18	5719.00	-0.2	2533.92	2.3
2238	92.2	2/19/2005 9:23	5724.00	-0.2	2538.92	2.3
2239	92.2	2/19/2005 9:28	5729.00	-0.2	2543.92	2.3
2240	92.3	2/19/2005 9:33	5734.00	-0.3	2548.92	2.2
2241	92.2	2/19/2005 9:38	5739.00	-0.2	2553.92	2.2
2242	92.2	2/19/2005 9:43	5744.00	-0.2	2558.92	2.2
2243	92.2	2/19/2005 9:48	5749.00	-0.2	2563.92	2.2
2244	92.2	2/19/2005 9:53	5754.00	-0.2	2568.92	2.2
2245	92.2	2/19/2005 9:58	5759.00	-0.2	2573.92	2.2
2246	92.2	2/19/2005 10:03	5764.00	-0.2	2578.92	2.2
2247	92.2	2/19/2005 10:08	5769.00	-0.2	2583.92	2.2
2248	92.2	2/19/2005 10:13	5774.00	-0.2	2588.92	2.2
2249	92.3	2/19/2005 10:18	5779.00	-0.3	2593.92	2.2
2250	92.2	2/19/2005 10:23	5784.00	-0.1	2598.92	2.2
2251	92.2	2/19/2005 10:28	5789.00	-0.1	2603.92	2.2
2252	92.2	2/19/2005 10:33	5794.00	-0.1	2608.92	2.2
2253	92.2	2/19/2005 10:38	5799.00	-0.1	2613.92	2.2
2254	92.3	2/19/2005 10:43	5804.00	-0.2	2618.92	2.2
2255	92.2	2/19/2005 10:48	5809.00	-0.1	2623.92	2.2
2256	92.2	2/19/2005 10:53	5814.00	-0.1	2628.92	2.2
2257	92.2	2/19/2005 10:58	5819.00	-0.1	2633.92	2.2
2258	92.2	2/19/2005 11:03	5824.00	-0.1	2638.92	2.2
2259	92.2	2/19/2005 11:08	5829.00	-0.1	2643.92	2.2
2260	92.2	2/19/2005 11:13	5834.00	-0.1	2648.92	2.2
2261	92.2	2/19/2005 11:18	5839.00	-0.1	2653.92	2.2
2262	92.2	2/19/2005 11:23	5844.00	-0.1	2658.92	2.2
2263	92.2	2/19/2005 11:28	5849.00	-0.1	2663.92	2.2
2264	92.2	2/19/2005 11:33	5854.00	-0.1	2668.92	2.2
2265	92.2	2/19/2005 11:38	5859.00	-0.2	2673.92	2.2
2266	92.2	2/19/2005 11:43	5864.00	-0.2	2678.92	2.2
2267	92.2	2/19/2005 11:48	5869.00	-0.2	2683.92	2.2
2268	92.2	2/19/2005 11:53	5874.00	-0.2	2688.92	2.2
2269	92.2	2/19/2005 11:58	5879.00	-0.2	2693.92	2.2
2270	92.2	2/19/2005 12:03	5884.00	-0.2	2698.92	2.2
2271	92.2	2/19/2005 12:08	5889.00	-0.1	2703.92	2.2
2272	92.2	2/19/2005 12:13	5894.00	-0.1	2708.92	2.2
2273	92.2	2/19/2005 12:18	5899.00	-0.1	2713.92	2.2
2274	92.2	2/19/2005 12:23	5904.00	-0.1	2718.92	2.2

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
2275	92.2	2/19/2005 12:28	5909.00	-0.1	2723.92	2.2
2276	92.2	2/19/2005 12:33	5914.00	-0.1	2728.92	2.2
2277	92.2	2/19/2005 12:38	5919.00	-0.2	2733.92	2.2
2278	92.2	2/19/2005 12:43	5924.00	-0.2	2738.92	2.2
2279	92.2	2/19/2005 12:48	5929.00	-0.2	2743.92	2.2
2280	92.2	2/19/2005 12:53	5934.00	-0.2	2748.92	2.2
2281	91.8	2/19/2005 12:58	5939.00	0.3	2753.92	2.2
2282	92.2	2/19/2005 13:03	5944.00	-0.2	2758.92	2.2
2283	92.2	2/19/2005 13:08	5949.00	-0.2	2763.92	2.2
2284	92.2	2/19/2005 13:13	5954.00	-0.2	2768.92	2.2
2285	92.2	2/19/2005 13:18	5959.00	-0.2	2773.92	2.1
2286	92.2	2/19/2005 13:23	5964.00	-0.2	2778.92	2.1
2287	92.2	2/19/2005 13:28	5969.00	-0.2	2783.92	2.1
2288	92.2	2/19/2005 13:33	5974.00	-0.2	2788.92	2.1
2289	92.2	2/19/2005 13:38	5979.00	-0.2	2793.92	2.1
2290	92.2	2/19/2005 13:43	5984.00	-0.2	2798.92	2.1
2291	92.2	2/19/2005 13:48	5989.00	-0.2	2803.92	2.1
2292	92.2	2/19/2005 13:53	5994.00	-0.2	2808.92	2.1
2293	92.2	2/19/2005 13:58	5999.00	-0.2	2813.92	2.1
2294	92.2	2/19/2005 14:03	6004.00	-0.2	2818.92	2.1
2295	92.2	2/19/2005 14:08	6009.00	-0.2	2823.92	2.1
2296	92.2	2/19/2005 14:13	6014.00	-0.2	2828.92	2.1
2297	92.2	2/19/2005 14:18	6019.00	-0.2	2833.92	2.1
2298	92.2	2/19/2005 14:23	6024.00	-0.2	2838.92	2.1
2299	92.2	2/19/2005 14:28	6029.00	-0.2	2843.92	2.1
2300	92.2	2/19/2005 14:33	6034.00	-0.2	2848.92	2.1
2301	92.2	2/19/2005 14:38	6039.00	-0.2	2853.92	2.1
2302	92.2	2/19/2005 14:43	6044.00	-0.2	2858.92	2.1
2303	92.2	2/19/2005 14:48	6049.00	-0.2	2863.92	2.1
2304	92.2	2/19/2005 14:53	6054.00	-0.2	2868.92	2.1
2305	92.2	2/19/2005 14:58	6059.00	-0.2	2873.92	2.1
2306	92.2	2/19/2005 15:03	6064.00	-0.2	2878.92	2.1
2307	92.2	2/19/2005 15:08	6069.00	-0.2	2883.92	2.1
2308	92.2	2/19/2005 15:13	6074.00	-0.2	2888.92	2.1
2309	92.2	2/19/2005 15:18	6079.00	-0.2	2893.92	2.1
2310	92.2	2/19/2005 15:23	6084.00	-0.2	2898.92	2.1
2311	92.2	2/19/2005 15:28	6089.00	-0.2	2903.92	2.1
2312	92.2	2/19/2005 15:33	6094.00	-0.2	2908.92	2.1
2313	92.2	2/19/2005 15:38	6099.00	-0.2	2913.92	2.1
2314	92.2	2/19/2005 15:43	6104.00	-0.2	2918.92	2.1
2315	92.2	2/19/2005 15:48	6109.00	-0.2	2923.92	2.1
2316	92.3	2/19/2005 15:53	6114.00	-0.3	2928.92	2.1
2317	92.2	2/19/2005 15:58	6119.00	-0.2	2933.92	2.1
2318	92.3	2/19/2005 16:03	6124.00	-0.3	2938.92	2.1
2319	92.2	2/19/2005 16:08	6129.00	-0.2	2943.92	2.1
2320	92.2	2/19/2005 16:13	6134.00	-0.2	2948.92	2.1
2321	92.2	2/19/2005 16:18	6139.00	-0.2	2953.92	2.1
2322	92.3	2/19/2005 16:23	6144.00	-0.3	2958.92	2.1
2323	92.2	2/19/2005 16:28	6149.00	-0.2	2963.92	2.1
2324	92.2	2/19/2005 16:33	6154.00	-0.2	2968.92	2.1
2325	92.3	2/19/2005 16:38	6159.00	-0.3	2973.92	2.1

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
2326	92.2	2/19/2005 16:43	6164.00	-0.2	2978.92	2.1
2327	92.2	2/19/2005 16:48	6169.00	-0.2	2983.92	2.1
2328	92.3	2/19/2005 16:53	6174.00	-0.3	2988.92	2.1
2329	92.2	2/19/2005 16:58	6179.00	-0.2	2993.92	2.1
2330	92.2	2/19/2005 17:03	6184.00	-0.2	2998.92	2.1
2331	92.3	2/19/2005 17:08	6189.00	-0.3	3003.92	2.1
2332	92.2	2/19/2005 17:13	6194.00	-0.2	3008.92	2.1
2333	92.3	2/19/2005 17:18	6199.00	-0.3	3013.92	2.1
2334	92.3	2/19/2005 17:23	6204.00	-0.3	3018.92	2.1
2335	92.3	2/19/2005 17:28	6209.00	-0.3	3023.92	2.1
2336	92.3	2/19/2005 17:33	6214.00	-0.3	3028.92	2.1
2337	92.3	2/19/2005 17:38	6219.00	-0.2	3033.92	2.0
2338	92.2	2/19/2005 17:43	6224.00	-0.1	3038.92	2.0
2339	92.2	2/19/2005 17:48	6229.00	-0.1	3043.92	2.0
2340	92.2	2/19/2005 17:53	6234.00	-0.1	3048.92	2.0
2341	92.3	2/19/2005 17:58	6239.00	-0.2	3053.92	2.0
2342	92.3	2/19/2005 18:03	6244.00	-0.2	3058.92	2.0
2343	92.2	2/19/2005 18:08	6249.00	-0.1	3063.92	2.0
2344	92.2	2/19/2005 18:13	6254.00	-0.1	3068.92	2.0
2345	92.3	2/19/2005 18:18	6259.00	-0.2	3073.92	2.0
2346	92.3	2/19/2005 18:23	6264.00	-0.2	3078.92	2.0
2347	92.3	2/19/2005 18:28	6269.00	-0.2	3083.92	2.0
2348	92.3	2/19/2005 18:33	6274.00	-0.2	3088.92	2.0
2349	92.3	2/19/2005 18:38	6279.00	-0.2	3093.92	2.0
2350	92.3	2/19/2005 18:43	6284.00	-0.2	3098.92	2.0
2351	92.2	2/19/2005 18:48	6289.00	-0.1	3103.92	2.0
2352	92.3	2/19/2005 18:53	6294.00	-0.2	3108.92	2.0
2353	92.3	2/19/2005 18:58	6299.00	-0.2	3113.92	2.0
2354	92.3	2/19/2005 19:03	6304.00	-0.2	3118.92	2.0
2355	92.2	2/19/2005 19:08	6309.00	-0.1	3123.92	2.0
2356	92.3	2/19/2005 19:13	6314.00	-0.2	3128.92	2.0
2357	92.3	2/19/2005 19:18	6319.00	-0.2	3133.92	2.0
2358	92.3	2/19/2005 19:23	6324.00	-0.2	3138.92	2.0
2359	92.3	2/19/2005 19:28	6329.00	-0.2	3143.92	2.0
2360	92.3	2/19/2005 19:33	6334.00	-0.2	3148.92	2.0
2361	92.3	2/19/2005 19:38	6339.00	-0.2	3153.92	2.0
2362	92.4	2/19/2005 19:43	6344.00	-0.3	3158.92	2.0
2363	92.3	2/19/2005 19:48	6349.00	-0.2	3163.92	2.0
2364	92.3	2/19/2005 19:53	6354.00	-0.2	3168.92	2.0
2365	92.3	2/19/2005 19:58	6359.00	-0.2	3173.92	2.0
2366	92.3	2/19/2005 20:03	6364.00	-0.2	3178.92	2.0
2367	92.3	2/19/2005 20:08	6369.00	-0.2	3183.92	2.0
2368	92.4	2/19/2005 20:13	6374.00	-0.3	3188.92	2.0
2369	92.3	2/19/2005 20:18	6379.00	-0.2	3193.92	2.0
2370	92.4	2/19/2005 20:23	6384.00	-0.3	3198.92	2.0
2371	92.4	2/19/2005 20:28	6389.00	-0.3	3203.92	2.0
2372	92.3	2/19/2005 20:33	6394.00	-0.2	3208.92	2.0
2373	92.3	2/19/2005 20:38	6399.00	-0.2	3213.92	2.0
2374	92.3	2/19/2005 20:43	6404.00	-0.2	3218.92	2.0
2375	92.4	2/19/2005 20:48	6409.00	-0.3	3223.92	2.0
2376	92.3	2/19/2005 20:53	6414.00	-0.2	3228.92	2.0

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
2377	92.3	2/19/2005 20:58	6419.00	-0.2	3233.92	2.0
2378	92.3	2/19/2005 21:03	6424.00	-0.2	3238.92	2.0
2379	92.4	2/19/2005 21:08	6429.00	-0.3	3243.92	2.0
2380	92.4	2/19/2005 21:13	6434.00	-0.3	3248.92	2.0
2381	92.3	2/19/2005 21:18	6439.00	-0.2	3253.92	2.0
2382	92.3	2/19/2005 21:23	6444.00	-0.2	3258.92	2.0
2383	92.3	2/19/2005 21:28	6449.00	-0.2	3263.92	2.0
2384	92.3	2/19/2005 21:33	6454.00	-0.2	3268.92	2.0
2385	92.3	2/19/2005 21:38	6459.00	-0.2	3273.92	2.0
2386	92.3	2/19/2005 21:43	6464.00	-0.2	3278.92	2.0
2387	92.3	2/19/2005 21:48	6469.00	-0.2	3283.92	2.0
2388	92.3	2/19/2005 21:53	6474.00	-0.2	3288.92	2.0
2389	92.3	2/19/2005 21:58	6479.00	-0.2	3293.92	2.0
2390	92.3	2/19/2005 22:03	6484.00	-0.2	3298.92	2.0
2391	92.3	2/19/2005 22:08	6489.00	-0.2	3303.92	2.0
2392	92.3	2/19/2005 22:13	6494.00	-0.2	3308.92	2.0
2393	92.4	2/19/2005 22:18	6499.00	-0.3	3313.92	2.0
2394	92.3	2/19/2005 22:23	6504.00	-0.2	3318.92	2.0
2395	92.4	2/19/2005 22:28	6509.00	-0.3	3323.92	2.0
2396	92.4	2/19/2005 22:33	6514.00	-0.3	3328.92	2.0
2397	92.4	2/19/2005 22:38	6519.00	-0.3	3333.92	2.0
2398	92.3	2/19/2005 22:43	6524.00	-0.2	3338.92	2.0
2399	92.3	2/19/2005 22:48	6529.00	-0.2	3343.92	2.0
2400	92.4	2/19/2005 22:53	6534.00	-0.3	3348.92	2.0
2401	92.4	2/19/2005 22:58	6539.00	-0.3	3353.92	1.9
2402	92.4	2/19/2005 23:03	6544.00	-0.3	3358.92	1.9
2403	92.4	2/19/2005 23:08	6549.00	-0.3	3363.92	1.9
2404	92.4	2/19/2005 23:13	6554.00	-0.3	3368.92	1.9
2405	92.3	2/19/2005 23:18	6559.00	-0.2	3373.92	1.9
2406	92.4	2/19/2005 23:23	6564.00	-0.3	3378.92	1.9
2407	92.4	2/19/2005 23:28	6569.00	-0.3	3383.92	1.9
2408	92.4	2/19/2005 23:33	6574.00	-0.3	3388.92	1.9
2409	92.3	2/19/2005 23:38	6579.00	-0.3	3393.92	1.9
2410	92.3	2/19/2005 23:43	6584.00	-0.3	3398.92	1.9
2411	92.3	2/19/2005 23:48	6589.00	-0.3	3403.92	1.9
2412	92.3	2/19/2005 23:53	6594.00	-0.3	3408.92	1.9
2413	92.3	2/19/2005 23:58	6599.00	-0.3	3413.92	1.9
2414	92.2	2/20/2005 0:03	6604.00	-0.2	3418.92	1.9
2415	92.3	2/20/2005 0:08	6609.00	-0.3	3423.92	1.9
2416	92.3	2/20/2005 0:13	6614.00	-0.3	3428.92	1.9
2417	92.3	2/20/2005 0:18	6619.00	-0.3	3433.92	1.9
2418	92.3	2/20/2005 0:23	6624.00	-0.3	3438.92	1.9
2419	92.3	2/20/2005 0:28	6629.00	-0.3	3443.92	1.9
2420	92.3	2/20/2005 0:33	6634.00	-0.3	3448.92	1.9
2421	92.3	2/20/2005 0:38	6639.00	-0.2	3453.92	1.9
2422	92.4	2/20/2005 0:43	6644.00	-0.3	3458.92	1.9
2423	92.4	2/20/2005 0:48	6649.00	-0.3	3463.92	1.9
2424	92.4	2/20/2005 0:53	6654.00	-0.3	3468.92	1.9
2425	92.4	2/20/2005 0:58	6659.00	-0.3	3473.92	1.9
2426	92.4	2/20/2005 1:03	6664.00	-0.3	3478.92	1.9
2427	92.4	2/20/2005 1:08	6669.00	-0.3	3483.92	1.9

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
2428	92.3	2/20/2005 1:13	6674.00	-0.2	3488.92	1.9
2429	92.4	2/20/2005 1:18	6679.00	-0.3	3493.92	1.9
2430	92.2	2/20/2005 1:23	6684.00	-0.2	3498.92	1.9
2431	92.3	2/20/2005 1:28	6689.00	-0.3	3503.92	1.9
2432	92.2	2/20/2005 1:33	6694.00	-0.2	3508.92	1.9
2433	92.3	2/20/2005 1:38	6699.00	-0.3	3513.92	1.9
2434	92.3	2/20/2005 1:43	6704.00	-0.3	3518.92	1.9
2435	92.3	2/20/2005 1:48	6709.00	-0.3	3523.92	1.9
2436	92.4	2/20/2005 1:53	6714.00	-0.3	3528.92	1.9
2437	92.4	2/20/2005 1:58	6719.00	-0.3	3533.92	1.9
2438	92.4	2/20/2005 2:03	6724.00	-0.3	3538.92	1.9
2439	92.4	2/20/2005 2:08	6729.00	-0.3	3543.92	1.9
2440	92.4	2/20/2005 2:13	6734.00	-0.3	3548.92	1.9
2441	92.4	2/20/2005 2:18	6739.00	-0.3	3553.92	1.9
2442	92.4	2/20/2005 2:23	6744.00	-0.3	3558.92	1.9
2443	92.4	2/20/2005 2:28	6749.00	-0.3	3563.92	1.9
2444	92.4	2/20/2005 2:33	6754.00	-0.3	3568.92	1.9
2445	92.4	2/20/2005 2:38	6759.00	-0.4	3573.92	1.9
2446	92.3	2/20/2005 2:43	6764.00	-0.3	3578.92	1.9
2447	92.3	2/20/2005 2:48	6769.00	-0.3	3583.92	1.9
2448	92.4	2/20/2005 2:53	6774.00	-0.3	3588.92	1.9
2449	92.4	2/20/2005 2:58	6779.00	-0.3	3593.92	1.9
2450	92.4	2/20/2005 3:03	6784.00	-0.3	3598.92	1.9
2451	92.4	2/20/2005 3:08	6789.00	-0.3	3603.92	1.9
2452	92.4	2/20/2005 3:13	6794.00	-0.3	3608.92	1.9
2453	92.4	2/20/2005 3:18	6799.00	-0.3	3613.92	1.9
2454	92.4	2/20/2005 3:23	6804.00	-0.3	3618.92	1.9
2455	92.4	2/20/2005 3:28	6809.00	-0.3	3623.92	1.9
2456	92.4	2/20/2005 3:33	6814.00	-0.3	3628.92	1.9
2457	92.5	2/20/2005 3:38	6819.00	-0.4	3633.92	1.9
2458	92.4	2/20/2005 3:43	6824.00	-0.3	3638.92	1.9
2459	92.4	2/20/2005 3:48	6829.00	-0.3	3643.92	1.9
2460	92.3	2/20/2005 3:53	6834.00	-0.3	3648.92	1.9
2461	92.3	2/20/2005 3:58	6839.00	-0.3	3653.92	1.9
2462	92.4	2/20/2005 4:03	6844.00	-0.4	3658.92	1.9
2463	92.4	2/20/2005 4:08	6849.00	-0.3	3663.92	1.9
2464	92.4	2/20/2005 4:13	6854.00	-0.3	3668.92	1.9
2465	92.4	2/20/2005 4:18	6859.00	-0.3	3673.92	1.9
2466	92.4	2/20/2005 4:23	6864.00	-0.3	3678.92	1.9
2467	92.4	2/20/2005 4:28	6869.00	-0.3	3683.92	1.9
2468	92.5	2/20/2005 4:33	6874.00	-0.4	3688.92	1.9
2469	92.3	2/20/2005 4:38	6879.00	-0.3	3693.92	1.9
2470	92.3	2/20/2005 4:43	6884.00	-0.3	3698.92	1.9
2471	92.3	2/20/2005 4:48	6889.00	-0.3	3703.92	1.9
2472	92.3	2/20/2005 4:53	6894.00	-0.3	3708.92	1.9
2473	92.3	2/20/2005 4:58	6899.00	-0.3	3713.92	1.9
2474	92.2	2/20/2005 5:03	6904.00	-0.2	3718.92	1.9
2475	92.3	2/20/2005 5:08	6909.00	-0.3	3723.92	1.9
2476	92.3	2/20/2005 5:13	6914.00	-0.3	3728.92	1.9
2477	92.4	2/20/2005 5:18	6919.00	-0.4	3733.92	1.9
2478	92.3	2/20/2005 5:23	6924.00	-0.3	3738.92	1.9

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
2479	92.3	2/20/2005 5:28	6929.00	-0.3	3743.92	1.9
2480	92.3	2/20/2005 5:33	6934.00	-0.3	3748.92	1.8
2481	92.3	2/20/2005 5:38	6939.00	-0.3	3753.92	1.8
2482	92.4	2/20/2005 5:43	6944.00	-0.4	3758.92	1.8
2483	92.3	2/20/2005 5:48	6949.00	-0.3	3763.92	1.8
2484	92.4	2/20/2005 5:53	6954.00	-0.4	3768.92	1.8
2485	92.4	2/20/2005 5:58	6959.00	-0.4	3773.92	1.8
2486	92.3	2/20/2005 6:03	6964.00	-0.3	3778.92	1.8
2487	92.3	2/20/2005 6:08	6969.00	-0.3	3783.92	1.8
2488	92.4	2/20/2005 6:13	6974.00	-0.4	3788.92	1.8
2489	92.3	2/20/2005 6:18	6979.00	-0.3	3793.92	1.8
2490	92.4	2/20/2005 6:23	6984.00	-0.4	3798.92	1.8
2491	92.3	2/20/2005 6:28	6989.00	-0.3	3803.92	1.8
2492	92.3	2/20/2005 6:33	6994.00	-0.3	3808.92	1.8
2493	92.3	2/20/2005 6:38	6999.00	-0.3	3813.92	1.8
2494	92.4	2/20/2005 6:43	7004.00	-0.4	3818.92	1.8
2495	92.3	2/20/2005 6:48	7009.00	-0.3	3823.92	1.8
2496	92.3	2/20/2005 6:53	7014.00	-0.3	3828.92	1.8
2497	92.4	2/20/2005 6:58	7019.00	-0.4	3833.92	1.8
2498	92.3	2/20/2005 7:03	7024.00	-0.3	3838.92	1.8
2499	92.3	2/20/2005 7:08	7029.00	-0.3	3843.92	1.8
2500	92.3	2/20/2005 7:13	7034.00	-0.3	3848.92	1.8
2501	92.4	2/20/2005 7:18	7039.00	-0.4	3853.92	1.8
2502	92.4	2/20/2005 7:23	7044.00	-0.3	3858.92	1.8
2503	92.4	2/20/2005 7:28	7049.00	-0.3	3863.92	1.8
2504	92.3	2/20/2005 7:33	7054.00	-0.2	3868.92	1.8
2505	92.4	2/20/2005 7:38	7059.00	-0.3	3873.92	1.8
2506	92.4	2/20/2005 7:43	7064.00	-0.3	3878.92	1.8
2507	92.4	2/20/2005 7:48	7069.00	-0.3	3883.92	1.8
2508	92.3	2/20/2005 7:53	7074.00	-0.2	3888.92	1.8
2509	92.3	2/20/2005 7:58	7079.00	-0.2	3893.92	1.8
2510	92.5	2/20/2005 8:03	7084.00	-0.4	3898.92	1.8
2511	92.4	2/20/2005 8:08	7089.00	-0.3	3903.92	1.8
2512	92.3	2/20/2005 8:13	7094.00	-0.2	3908.92	1.8
2513	92.5	2/20/2005 8:18	7099.00	-0.4	3913.92	1.8
2514	92.4	2/20/2005 8:23	7104.00	-0.3	3918.92	1.8
2515	92.4	2/20/2005 8:28	7109.00	-0.3	3923.92	1.8
2516	92.4	2/20/2005 8:33	7114.00	-0.3	3928.92	1.8
2517	92.4	2/20/2005 8:38	7119.00	-0.3	3933.92	1.8
2518	92.4	2/20/2005 8:43	7124.00	-0.3	3938.92	1.8
2519	92.4	2/20/2005 8:48	7129.00	-0.3	3943.92	1.8
2520	92.3	2/20/2005 8:53	7134.00	-0.2	3948.92	1.8
2521	92.3	2/20/2005 8:58	7139.00	-0.2	3953.92	1.8
2522	92.4	2/20/2005 9:03	7144.00	-0.3	3958.92	1.8
2523	92.4	2/20/2005 9:08	7149.00	-0.3	3963.92	1.8
2524	92.3	2/20/2005 9:13	7154.00	-0.2	3968.92	1.8
2525	92.4	2/20/2005 9:18	7159.00	-0.3	3973.92	1.8
2526	92.3	2/20/2005 9:23	7164.00	-0.2	3978.92	1.8
2527	92.4	2/20/2005 9:28	7169.00	-0.3	3983.92	1.8
2528	92.4	2/20/2005 9:33	7174.00	-0.3	3988.92	1.8
2529	92.4	2/20/2005 9:38	7179.00	-0.3	3993.92	1.8

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
2530	92.3	2/20/2005 9:43	7184.00	-0.2	3998.92	1.8
2531	92.4	2/20/2005 9:48	7189.00	-0.3	4003.92	1.8
2532	92.4	2/20/2005 9:53	7194.00	-0.3	4008.92	1.8
2533	92.4	2/20/2005 9:58	7199.00	-0.3	4013.92	1.8
2534	92.4	2/20/2005 10:03	7204.00	-0.3	4018.92	1.8
2535	92.3	2/20/2005 10:08	7209.00	-0.2	4023.92	1.8
2536	92.4	2/20/2005 10:13	7214.00	-0.3	4028.92	1.8
2537	92.3	2/20/2005 10:18	7219.00	-0.2	4033.92	1.8
2538	92.4	2/20/2005 10:23	7224.00	-0.3	4038.92	1.8
2539	92.4	2/20/2005 10:28	7229.00	-0.3	4043.92	1.8
2540	92.4	2/20/2005 10:33	7234.00	-0.3	4048.92	1.8
2541	92.3	2/20/2005 10:38	7239.00	-0.2	4053.92	1.8
2542	92.4	2/20/2005 10:43	7244.00	-0.3	4058.92	1.8
2543	92.3	2/20/2005 10:48	7249.00	-0.2	4063.92	1.8
2544	92.3	2/20/2005 10:53	7254.00	-0.2	4068.92	1.8
2545	92.4	2/20/2005 10:58	7259.00	-0.3	4073.92	1.8
2546	92.3	2/20/2005 11:03	7264.00	-0.2	4078.92	1.8
2547	92.3	2/20/2005 11:08	7269.00	-0.2	4083.92	1.8
2548	92.4	2/20/2005 11:13	7274.00	-0.3	4088.92	1.8
2549	92.3	2/20/2005 11:18	7279.00	-0.2	4093.92	1.8
2550	92.4	2/20/2005 11:23	7284.00	-0.3	4098.92	1.8
2551	92.3	2/20/2005 11:28	7289.00	-0.2	4103.92	1.8
2552	92.4	2/20/2005 11:33	7294.00	-0.3	4108.92	1.8
2553	92.4	2/20/2005 11:38	7299.00	-0.3	4113.92	1.8
2554	92.4	2/20/2005 11:43	7304.00	-0.3	4118.92	1.8
2555	92.4	2/20/2005 11:48	7309.00	-0.3	4123.92	1.8
2556	92.3	2/20/2005 11:53	7314.00	-0.2	4128.92	1.8
2557	92.4	2/20/2005 11:58	7319.00	-0.3	4133.92	1.8
2558	92.4	2/20/2005 12:03	7324.00	-0.3	4138.92	1.8
2559	92.4	2/20/2005 12:08	7329.00	-0.3	4143.92	1.8
2560	92.4	2/20/2005 12:13	7334.00	-0.3	4148.92	1.8
2561	92.4	2/20/2005 12:18	7339.00	-0.3	4153.92	1.8
2562	92.3	2/20/2005 12:23	7344.00	-0.2	4158.92	1.8
2563	92.3	2/20/2005 12:28	7349.00	-0.2	4163.92	1.8
2564	92.3	2/20/2005 12:33	7354.00	-0.2	4168.92	1.8
2565	92.3	2/20/2005 12:38	7359.00	-0.2	4173.92	1.8
2566	92.4	2/20/2005 12:43	7364.00	-0.3	4178.92	1.8
2567	92.4	2/20/2005 12:48	7369.00	-0.3	4183.92	1.8
2568	92.4	2/20/2005 12:53	7374.00	-0.3	4188.92	1.8
2569	92.4	2/20/2005 12:58	7379.00	-0.3	4193.92	1.8
2570	92.4	2/20/2005 13:03	7384.00	-0.3	4198.92	1.8
2571	92.4	2/20/2005 13:08	7389.00	-0.3	4203.92	1.8
2572	92.3	2/20/2005 13:13	7394.00	-0.2	4208.92	1.8
2573	92.3	2/20/2005 13:18	7399.00	-0.2	4213.92	1.8
2574	92.4	2/20/2005 13:23	7404.00	-0.3	4218.92	1.8
2575	92.3	2/20/2005 13:28	7409.00	-0.2	4223.92	1.8
2576	92.3	2/20/2005 13:33	7414.00	-0.2	4228.92	1.8
2577	92.3	2/20/2005 13:38	7419.00	-0.2	4233.92	1.8
2578	92.4	2/20/2005 13:43	7424.00	-0.3	4238.92	1.8
2579	92.4	2/20/2005 13:48	7429.00	-0.3	4243.92	1.8
2580	92.4	2/20/2005 13:53	7434.00	-0.4	4248.92	1.7

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began</b>	<b>Barometrically Corrected Drawdown</b>	<b>Time Since Pumping Stopped</b>	<b>t/t'</b>
	<b>(ft)</b>		<b>(minutes)</b>	<b>(ft)</b>	<b>(minutes)</b>	
2581	92.4	2/20/2005 13:58	7439.00	-0.4	4253.92	1.7
2582	92.4	2/20/2005 14:03	7444.00	-0.4	4258.92	1.7
2583	92.3	2/20/2005 14:08	7449.00	-0.2	4263.92	1.7
2584	92.4	2/20/2005 14:13	7454.00	-0.3	4268.92	1.7
2585	92.4	2/20/2005 14:18	7459.00	-0.3	4273.92	1.7
2586	92.4	2/20/2005 14:23	7464.00	-0.4	4278.92	1.7
2587	92.4	2/20/2005 14:28	7469.00	-0.4	4283.92	1.7
2588	92.3	2/20/2005 14:33	7474.00	-0.3	4288.92	1.7
2589	92.4	2/20/2005 14:38	7479.00	-0.4	4293.92	1.7
2590	92.4	2/20/2005 14:43	7484.00	-0.4	4298.92	1.7
2591	92.4	2/20/2005 14:48	7489.00	-0.4	4303.92	1.7
2592	92.4	2/20/2005 14:53	7494.00	-0.4	4308.92	1.7
2593	92.3	2/20/2005 14:58	7499.00	-0.3	4313.92	1.7
2594	92.4	2/20/2005 15:03	7504.00	-0.4	4318.92	1.7
2595	92.4	2/20/2005 15:08	7509.00	-0.4	4323.92	1.7
2596	92.4	2/20/2005 15:13	7514.00	-0.4	4328.92	1.7
2597	92.3	2/20/2005 15:18	7519.00	-0.3	4333.92	1.7
2598	92.4	2/20/2005 15:23	7524.00	-0.4	4338.92	1.7
2599	92.4	2/20/2005 15:28	7529.00	-0.4	4343.92	1.7
2600	92.4	2/20/2005 15:33	7534.00	-0.4	4348.92	1.7
2601	92.4	2/20/2005 15:38	7539.00	-0.4	4353.92	1.7
2602	92.3	2/20/2005 15:43	7544.00	-0.3	4358.92	1.7
2603	92.4	2/20/2005 15:48	7549.00	-0.4	4363.92	1.7
2604	92.4	2/20/2005 15:53	7554.00	-0.4	4368.92	1.7
2605	92.4	2/20/2005 15:58	7559.00	-0.4	4373.92	1.7
2606	92.4	2/20/2005 16:03	7564.00	-0.4	4378.92	1.7
2607	92.4	2/20/2005 16:08	7569.00	-0.4	4383.92	1.7
2608	92.4	2/20/2005 16:13	7574.00	-0.4	4388.92	1.7
2609	92.4	2/20/2005 16:18	7579.00	-0.4	4393.92	1.7
2610	92.4	2/20/2005 16:23	7584.00	-0.4	4398.92	1.7
2611	92.4	2/20/2005 16:28	7589.00	-0.4	4403.92	1.7
2612	92.3	2/20/2005 16:33	7594.00	-0.3	4408.92	1.7
2613	92.3	2/20/2005 16:38	7599.00	-0.3	4413.92	1.7
2614	92.4	2/20/2005 16:43	7604.00	-0.4	4418.92	1.7
2615	92.4	2/20/2005 16:48	7609.00	-0.4	4423.92	1.7
2616	92.3	2/20/2005 16:53	7614.00	-0.3	4428.92	1.7
2617	92.4	2/20/2005 16:58	7619.00	-0.4	4433.92	1.7
2618	92.4	2/20/2005 17:03	7624.00	-0.4	4438.92	1.7
2619	92.4	2/20/2005 17:08	7629.00	-0.4	4443.92	1.7
2620	92.4	2/20/2005 17:13	7634.00	-0.4	4448.92	1.7
2621	92.4	2/20/2005 17:18	7639.00	-0.4	4453.92	1.7
2622	92.5	2/20/2005 17:23	7644.00	-0.4	4458.92	1.7
2623	92.5	2/20/2005 17:28	7649.00	-0.4	4463.92	1.7
2624	92.5	2/20/2005 17:33	7654.00	-0.4	4468.92	1.7
2625	92.5	2/20/2005 17:38	7659.00	-0.4	4473.92	1.7
2626	92.5	2/20/2005 17:43	7664.00	-0.4	4478.92	1.7
2627	92.5	2/20/2005 17:48	7669.00	-0.4	4483.92	1.7
2628	92.5	2/20/2005 17:53	7674.00	-0.4	4488.92	1.7
2629	92.4	2/20/2005 17:58	7679.00	-0.3	4493.92	1.7
2630	92.4	2/20/2005 18:03	7684.00	-0.3	4498.92	1.7
2631	92.5	2/20/2005 18:08	7689.00	-0.5	4503.92	1.7

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
2632	92.4	2/20/2005 18:13	7694.00	-0.4	4508.92	1.7
2633	92.4	2/20/2005 18:18	7699.00	-0.4	4513.92	1.7
2634	92.4	2/20/2005 18:23	7704.00	-0.4	4518.92	1.7
2635	92.4	2/20/2005 18:28	7709.00	-0.4	4523.92	1.7
2636	92.4	2/20/2005 18:33	7714.00	-0.4	4528.92	1.7
2637	92.4	2/20/2005 18:38	7719.00	-0.4	4533.92	1.7
2638	92.4	2/20/2005 18:43	7724.00	-0.4	4538.92	1.7
2639	92.4	2/20/2005 18:48	7729.00	-0.4	4543.92	1.7
2640	92.4	2/20/2005 18:53	7734.00	-0.4	4548.92	1.7
2641	92.4	2/20/2005 18:58	7739.00	-0.4	4553.92	1.7
2642	92.4	2/20/2005 19:03	7744.00	-0.4	4558.92	1.7
2643	92.4	2/20/2005 19:08	7749.00	-0.4	4563.92	1.7
2644	92.4	2/20/2005 19:13	7754.00	-0.4	4568.92	1.7
2645	92.4	2/20/2005 19:18	7759.00	-0.4	4573.92	1.7
2646	92.4	2/20/2005 19:23	7764.00	-0.4	4578.92	1.7
2647	92.4	2/20/2005 19:28	7769.00	-0.4	4583.92	1.7
2648	92.4	2/20/2005 19:33	7774.00	-0.4	4588.92	1.7
2649	92.4	2/20/2005 19:38	7779.00	-0.4	4593.92	1.7
2650	92.4	2/20/2005 19:43	7784.00	-0.4	4598.92	1.7
2651	92.5	2/20/2005 19:48	7789.00	-0.5	4603.92	1.7
2652	92.5	2/20/2005 19:53	7794.00	-0.4	4608.92	1.7
2653	92.5	2/20/2005 19:58	7799.00	-0.4	4613.92	1.7
2654	92.5	2/20/2005 20:03	7804.00	-0.4	4618.92	1.7
2655	92.4	2/20/2005 20:08	7809.00	-0.4	4623.92	1.7
2656	92.4	2/20/2005 20:13	7814.00	-0.4	4628.92	1.7
2657	92.4	2/20/2005 20:18	7819.00	-0.4	4633.92	1.7
2658	92.3	2/20/2005 20:23	7824.00	-0.3	4638.92	1.7
2659	92.5	2/20/2005 20:28	7829.00	-0.5	4643.92	1.7
2660	92.4	2/20/2005 20:33	7834.00	-0.4	4648.92	1.7
2661	92.5	2/20/2005 20:38	7839.00	-0.5	4653.92	1.7
2662	92.4	2/20/2005 20:43	7844.00	-0.4	4658.92	1.7
2663	92.4	2/20/2005 20:48	7849.00	-0.4	4663.92	1.7
2664	92.6	2/20/2005 20:53	7854.00	-0.5	4668.92	1.7
2665	92.6	2/20/2005 20:58	7859.00	-0.5	4673.92	1.7
2666	92.5	2/20/2005 21:03	7864.00	-0.4	4678.92	1.7
2667	92.4	2/20/2005 21:08	7869.00	-0.4	4683.92	1.7
2668	92.5	2/20/2005 21:13	7874.00	-0.5	4688.92	1.7
2669	92.4	2/20/2005 21:18	7879.00	-0.4	4693.92	1.7
2670	92.4	2/20/2005 21:23	7884.00	-0.4	4698.92	1.7
2671	92.4	2/20/2005 21:28	7889.00	-0.4	4703.92	1.7
2672	92.4	2/20/2005 21:33	7894.00	-0.4	4708.92	1.7
2673	92.4	2/20/2005 21:38	7899.00	-0.4	4713.92	1.7
2674	92.4	2/20/2005 21:43	7904.00	-0.4	4718.92	1.7
2675	92.4	2/20/2005 21:48	7909.00	-0.4	4723.92	1.7
2676	92.4	2/20/2005 21:53	7914.00	-0.4	4728.92	1.7
2677	92.4	2/20/2005 21:58	7919.00	-0.4	4733.92	1.7
2678	92.5	2/20/2005 22:03	7924.00	-0.5	4738.92	1.7
2679	92.6	2/20/2005 22:08	7929.00	-0.5	4743.92	1.7
2680	92.5	2/20/2005 22:13	7934.00	-0.4	4748.92	1.7
2681	92.6	2/20/2005 22:18	7939.00	-0.5	4753.92	1.7
2682	92.6	2/20/2005 22:23	7944.00	-0.5	4758.92	1.7

**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
2683	92.5	2/20/2005 22:28	7949.00	-0.4	4763.92	1.7
2684	92.6	2/20/2005 22:33	7954.00	-0.5	4768.92	1.7
2685	92.6	2/20/2005 22:38	7959.00	-0.5	4773.92	1.7
2686	92.5	2/20/2005 22:43	7964.00	-0.4	4778.92	1.7
2687	92.5	2/20/2005 22:48	7969.00	-0.4	4783.92	1.7
2688	92.5	2/20/2005 22:53	7974.00	-0.4	4788.92	1.7
2689	92.5	2/20/2005 22:58	7979.00	-0.4	4793.92	1.7
2690	92.5	2/20/2005 23:03	7984.00	-0.4	4798.92	1.7
2691	92.6	2/20/2005 23:08	7989.00	-0.5	4803.92	1.7
2692	92.6	2/20/2005 23:13	7994.00	-0.5	4808.92	1.7
2693	92.6	2/20/2005 23:18	7999.00	-0.5	4813.92	1.7
2694	92.5	2/20/2005 23:23	8004.00	-0.4	4818.92	1.7
2695	92.5	2/20/2005 23:28	8009.00	-0.4	4823.92	1.7
2696	92.6	2/20/2005 23:33	8014.00	-0.5	4828.92	1.7
2697	92.6	2/20/2005 23:38	8019.00	-0.5	4833.92	1.7
2698	92.6	2/20/2005 23:43	8024.00	-0.5	4838.92	1.7
2699	92.5	2/20/2005 23:48	8029.00	-0.4	4843.92	1.7
2700	92.6	2/20/2005 23:53	8034.00	-0.5	4848.92	1.7
2701	92.6	2/20/2005 23:58	8039.00	-0.5	4853.92	1.7
2702	92.5	2/21/2005 0:03	8044.00	-0.4	4858.92	1.7
2703	92.6	2/21/2005 0:08	8049.00	-0.5	4863.92	1.7
2704	92.6	2/21/2005 0:13	8054.00	-0.5	4868.92	1.7
2705	92.5	2/21/2005 0:18	8059.00	-0.4	4873.92	1.7
2706	92.5	2/21/2005 0:23	8064.00	-0.4	4878.92	1.7
2707	92.6	2/21/2005 0:28	8069.00	-0.5	4883.92	1.7
2708	92.6	2/21/2005 0:33	8074.00	-0.5	4888.92	1.7
2709	92.6	2/21/2005 0:38	8079.00	-0.5	4893.92	1.7
2710	92.5	2/21/2005 0:43	8084.00	-0.4	4898.92	1.7
2711	92.5	2/21/2005 0:48	8089.00	-0.4	4903.92	1.6
2712	92.5	2/21/2005 0:53	8094.00	-0.4	4908.92	1.6
2713	92.5	2/21/2005 0:58	8099.00	-0.4	4913.92	1.6
2714	92.6	2/21/2005 1:03	8104.00	-0.5	4918.92	1.6
2715	92.6	2/21/2005 1:08	8109.00	-0.5	4923.92	1.6
2716	92.6	2/21/2005 1:13	8114.00	-0.5	4928.92	1.6
2717	92.6	2/21/2005 1:18	8119.00	-0.5	4933.92	1.6
2718	92.6	2/21/2005 1:23	8124.00	-0.5	4938.92	1.6
2719	92.6	2/21/2005 1:28	8129.00	-0.5	4943.92	1.6
2720	92.6	2/21/2005 1:33	8134.00	-0.5	4948.92	1.6
2721	92.6	2/21/2005 1:38	8139.00	-0.5	4953.92	1.6
2722	92.6	2/21/2005 1:43	8144.00	-0.5	4958.92	1.6
2723	92.5	2/21/2005 1:48	8149.00	-0.5	4963.92	1.6
2724	92.6	2/21/2005 1:53	8154.00	-0.6	4968.92	1.6
2725	92.6	2/21/2005 1:58	8159.00	-0.6	4973.92	1.6
2726	92.5	2/21/2005 2:03	8164.00	-0.5	4978.92	1.6
2727	92.5	2/21/2005 2:08	8169.00	-0.5	4983.92	1.6
2728	92.5	2/21/2005 2:13	8174.00	-0.5	4988.92	1.6
2729	92.5	2/21/2005 2:18	8179.00	-0.5	4993.92	1.6
2730	92.5	2/21/2005 2:23	8184.00	-0.5	4998.92	1.6
2731	92.6	2/21/2005 2:28	8189.00	-0.6	5003.92	1.6
2732	92.5	2/21/2005 2:33	8194.00	-0.5	5008.92	1.6
2733	92.5	2/21/2005 2:38	8199.00	-0.5	5013.92	1.6

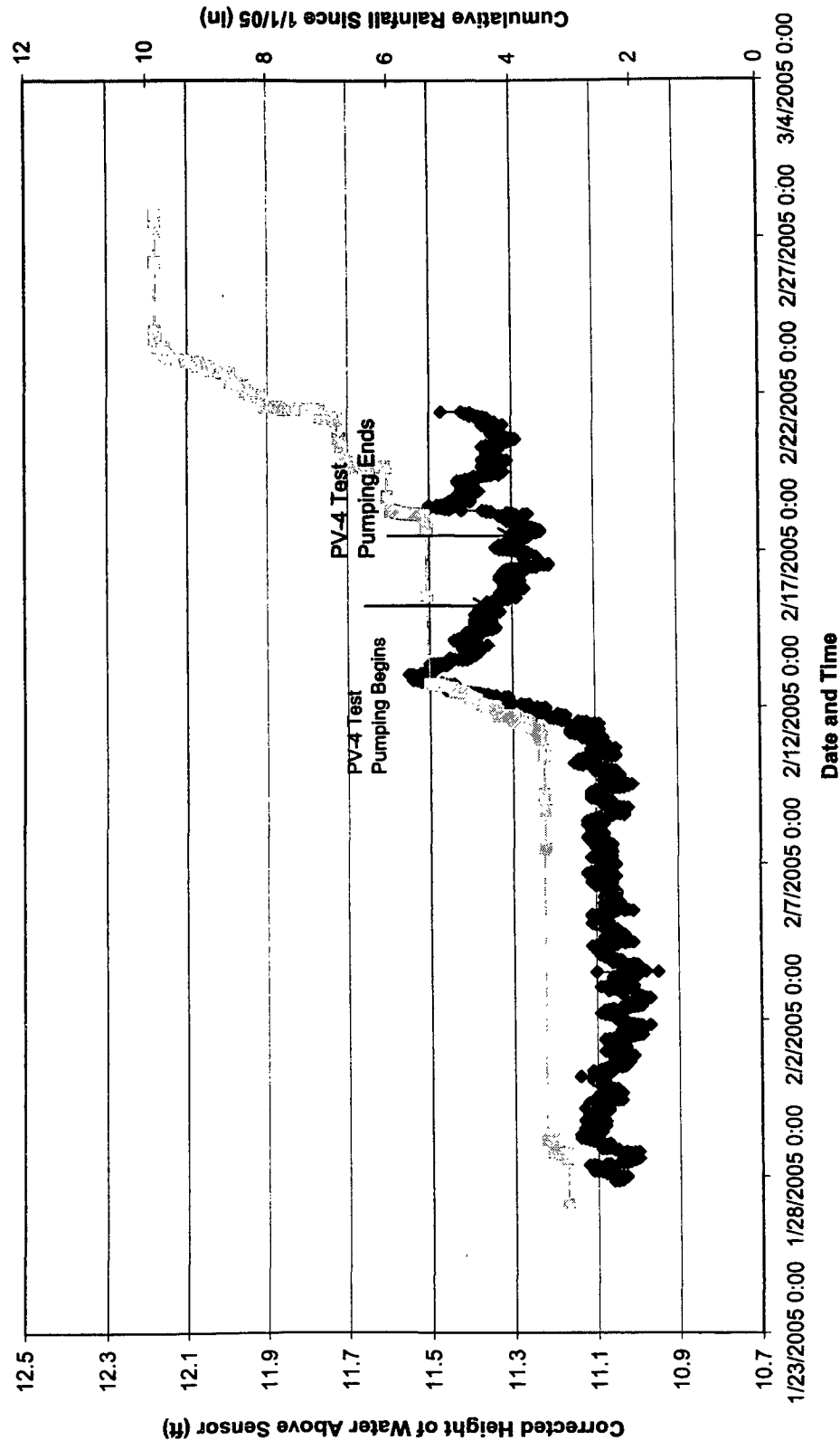
**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

<b>Data Entry No.</b>	<b>Height of Water Above Transducer, Barometrically Corrected (ft)</b>	<b>Date &amp; Time, PV-4 Logger</b>	<b>Time Since Pumping Began (minutes)</b>	<b>Barometrically Corrected Drawdown (ft)</b>	<b>Time Since Pumping Stopped (minutes)</b>	<b>t/t'</b>
2734	92.5	2/21/2005 2:43	8204.00	-0.5	5018.92	1.6
2735	92.5	2/21/2005 2:48	8209.00	-0.5	5023.92	1.6
2736	92.5	2/21/2005 2:53	8214.00	-0.5	5028.92	1.6
2737	92.6	2/21/2005 2:58	8219.00	-0.6	5033.92	1.6
2738	92.5	2/21/2005 3:03	8224.00	-0.5	5038.92	1.6
2739	92.5	2/21/2005 3:08	8229.00	-0.5	5043.92	1.6
2740	92.6	2/21/2005 3:13	8234.00	-0.6	5048.92	1.6
2741	92.5	2/21/2005 3:18	8239.00	-0.5	5053.92	1.6
2742	92.5	2/21/2005 3:23	8244.00	-0.5	5058.92	1.6
2743	92.6	2/21/2005 3:28	8249.00	-0.6	5063.92	1.6
2744	92.5	2/21/2005 3:33	8254.00	-0.5	5068.92	1.6
2745	92.5	2/21/2005 3:38	8259.00	-0.5	5073.92	1.6
2746	92.5	2/21/2005 3:43	8264.00	-0.5	5078.92	1.6
2747	92.5	2/21/2005 3:48	8269.00	-0.5	5083.92	1.6
2748	92.6	2/21/2005 3:53	8274.00	-0.5	5088.92	1.6
2749	92.7	2/21/2005 3:58	8279.00	-0.6	5093.92	1.6
2750	92.7	2/21/2005 4:03	8284.00	-0.6	5098.92	1.6
2751	92.6	2/21/2005 4:08	8289.00	-0.5	5103.92	1.6
2752	92.6	2/21/2005 4:13	8294.00	-0.5	5108.92	1.6
2753	92.6	2/21/2005 4:18	8299.00	-0.5	5113.92	1.6
2754	92.6	2/21/2005 4:23	8304.00	-0.5	5118.92	1.6
2755	92.6	2/21/2005 4:28	8309.00	-0.5	5123.92	1.6
2756	92.6	2/21/2005 4:33	8314.00	-0.5	5128.92	1.6
2757	92.6	2/21/2005 4:38	8319.00	-0.5	5133.92	1.6
2758	92.6	2/21/2005 4:43	8324.00	-0.5	5138.92	1.6
2759	92.6	2/21/2005 4:48	8329.00	-0.5	5143.92	1.6
2760	92.6	2/21/2005 4:53	8334.00	-0.5	5148.92	1.6
2761	92.6	2/21/2005 4:58	8339.00	-0.5	5153.92	1.6
2762	92.6	2/21/2005 5:03	8344.00	-0.5	5158.92	1.6
2763	92.5	2/21/2005 5:08	8349.00	-0.5	5163.92	1.6
2764	92.5	2/21/2005 5:13	8354.00	-0.5	5168.92	1.6
2765	92.5	2/21/2005 5:18	8359.00	-0.5	5173.92	1.6
2766	92.7	2/21/2005 5:23	8364.00	-0.6	5178.92	1.6
2767	92.6	2/21/2005 5:28	8369.00	-0.5	5183.92	1.6
2768	92.6	2/21/2005 5:33	8374.00	-0.5	5188.92	1.6
2769	92.6	2/21/2005 5:38	8379.00	-0.5	5193.92	1.6
2770	92.6	2/21/2005 5:43	8384.00	-0.5	5198.92	1.6
2771	92.6	2/21/2005 5:48	8389.00	-0.5	5203.92	1.6
2772	92.6	2/21/2005 5:53	8394.00	-0.5	5208.92	1.6
2773	92.6	2/21/2005 5:58	8399.00	-0.5	5213.92	1.6
2774	92.6	2/21/2005 6:03	8404.00	-0.5	5218.92	1.6
2775	92.6	2/21/2005 6:08	8409.00	-0.5	5223.92	1.6
2776	92.6	2/21/2005 6:13	8414.00	-0.5	5228.92	1.6
2777	92.6	2/21/2005 6:18	8419.00	-0.5	5233.92	1.6
2778	92.7	2/21/2005 6:23	8424.00	-0.6	5238.92	1.6
2779	92.6	2/21/2005 6:28	8429.00	-0.5	5243.92	1.6
2780	92.6	2/21/2005 6:33	8434.00	-0.5	5248.92	1.6
2781	92.6	2/21/2005 6:38	8439.00	-0.5	5253.92	1.6
2782	92.7	2/21/2005 6:43	8444.00	-0.6	5258.92	1.6
2783	92.6	2/21/2005 6:48	8449.00	-0.5	5263.92	1.6
2784	92.6	2/21/2005 6:53	8454.00	-0.5	5268.92	1.6

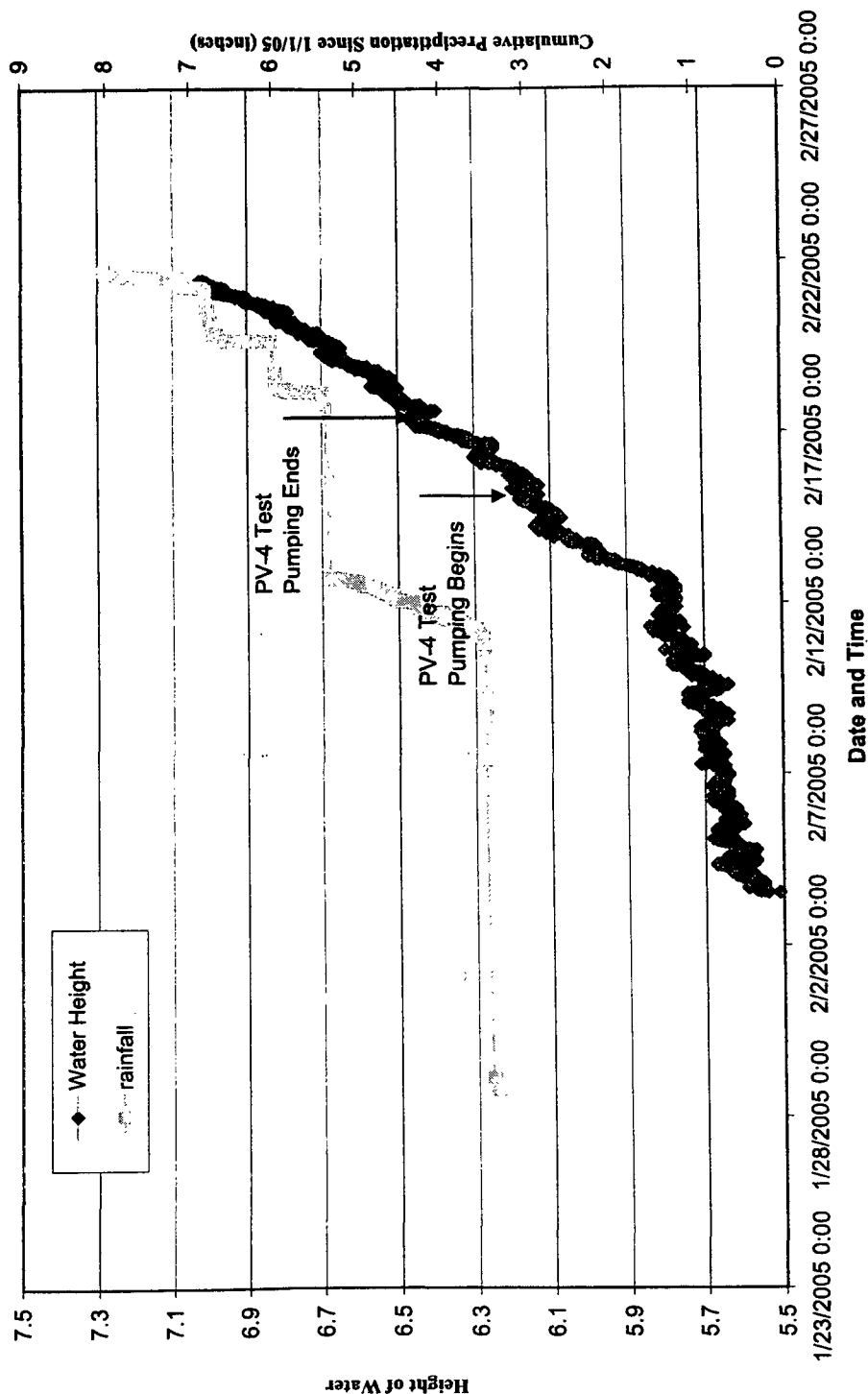
**CONSTANT DISCHARGE TEST**  
**PUMPING WELL PV-4**  
**DISCHARGE = 41 gallons per minute**  
**PEACEFUL VALLEY RANCH**

Data Entry No.	Height of Water Above Transducer, Barometrically Corrected (ft)	Date & Time, PV-4 Logger	Time Since Pumping Began (minutes)	Barometrically Corrected Drawdown (ft)	Time Since Pumping Stopped (minutes)	t/t'
2785	92.6	2/21/2005 6:58	8459.00	-0.5	5273.92	1.6
2786	92.6	2/21/2005 7:03	8464.00	-0.5	5278.92	1.6
2787	92.6	2/21/2005 7:08	8469.00	-0.5	5283.92	1.6
2788	92.7	2/21/2005 7:13	8474.00	-0.6	5288.92	1.6
2789	92.6	2/21/2005 7:18	8479.00	-0.5	5293.92	1.6
2790	92.6	2/21/2005 7:23	8484.00	-0.5	5298.92	1.6
2791	92.6	2/21/2005 7:28	8489.00	-0.5	5303.92	1.6
2792	92.5	2/21/2005 7:33	8494.00	-0.4	5308.92	1.6
2793	92.6	2/21/2005 7:38	8499.00	-0.5	5313.92	1.6
2794	92.6	2/21/2005 7:43	8504.00	-0.5	5318.92	1.6
2795	92.6	2/21/2005 7:48	8509.00	-0.5	5323.92	1.6
2796	92.6	2/21/2005 7:53	8514.00	-0.5	5328.92	1.6
2797	92.6	2/21/2005 7:58	8519.00	-0.5	5333.92	1.6
2798	92.6	2/21/2005 8:03	8524.00	-0.5	5338.92	1.6
2799	92.7	2/21/2005 8:08	8529.00	-0.6	5343.92	1.6
2800	92.6	2/21/2005 8:13	8534.00	-0.5	5348.92	1.6
2801	92.6	2/21/2005 8:18	8539.00	-0.5	5353.92	1.6
2802	92.6	2/21/2005 8:23	8544.00	-0.5	5358.92	1.6
2803	92.6	2/21/2005 8:28	8549.00	-0.5	5363.92	1.6
2804	92.6	2/21/2005 8:33	8554.00	-0.5	5368.92	1.6
2805	92.7	2/21/2005 8:38	8559.00	-0.6	5373.92	1.6
2806	92.7	2/21/2005 8:43	8564.00	-0.6	5378.92	1.6
2807	92.7	2/21/2005 8:48	8569.00	-0.6	5383.92	1.6
2808	92.6	2/21/2005 8:53	8574.00	-0.5	5388.92	1.6
2809	92.6	2/21/2005 8:58	8579.00	-0.5	5393.92	1.6
2810	92.6	2/21/2005 9:03	8584.00	-0.5	5398.92	1.6
2811	92.6	2/21/2005 9:08	8589.00	-0.5	5403.92	1.6
2812	92.6	2/21/2005 9:13	8594.00	-0.5	5408.92	1.6
2813	92.7	2/21/2005 9:18	8599.00	-0.6	5413.92	1.6
2814	92.7	2/21/2005 9:23	8604.00	-0.6	5418.92	1.6
2815	92.7	2/21/2005 9:28	8609.00	-0.6	5423.92	1.6
2816	92.6	2/21/2005 9:33	8614.00	-0.5	5428.92	1.6
2817	92.6	2/21/2005 9:38	8619.00	-0.5	5433.92	1.6
2818	92.7	2/21/2005 9:43	8624.00	-0.6	5438.92	1.6
2819	92.6	2/21/2005 9:48	8629.00	-0.5	5443.92	1.6
2820	92.6	2/21/2005 9:53	8634.00	-0.5	5448.92	1.6
2821	92.7	2/21/2005 9:58	8639.00	-0.6	5453.92	1.6
2822	92.6	2/21/2005 10:03	8644.00	-0.5	5458.92	1.6
2823	92.6	2/21/2005 10:08	8649.00	-0.5	5463.92	1.6
2824	92.6	2/21/2005 10:13	8654.00	-0.5	5468.92	1.6
2825	92.6	2/21/2005 10:18	8659.00	-0.5	5473.92	1.6
2826	92.6	2/21/2005 10:23	8664.00	-0.5	5478.92	1.6

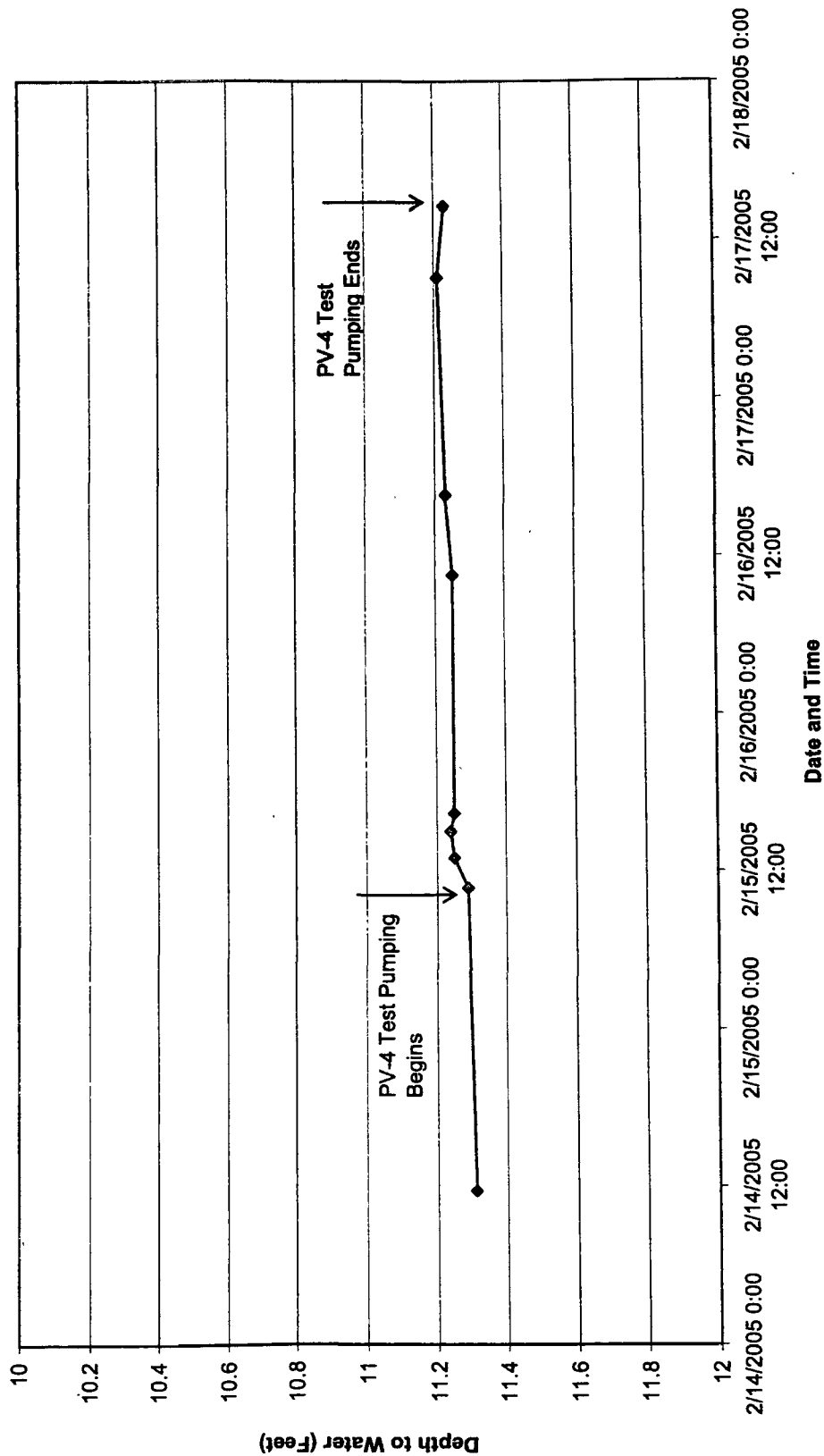
# Corrected Water Height Above Transducer and Cumulative Precipitation Versus Time Septic Boring J



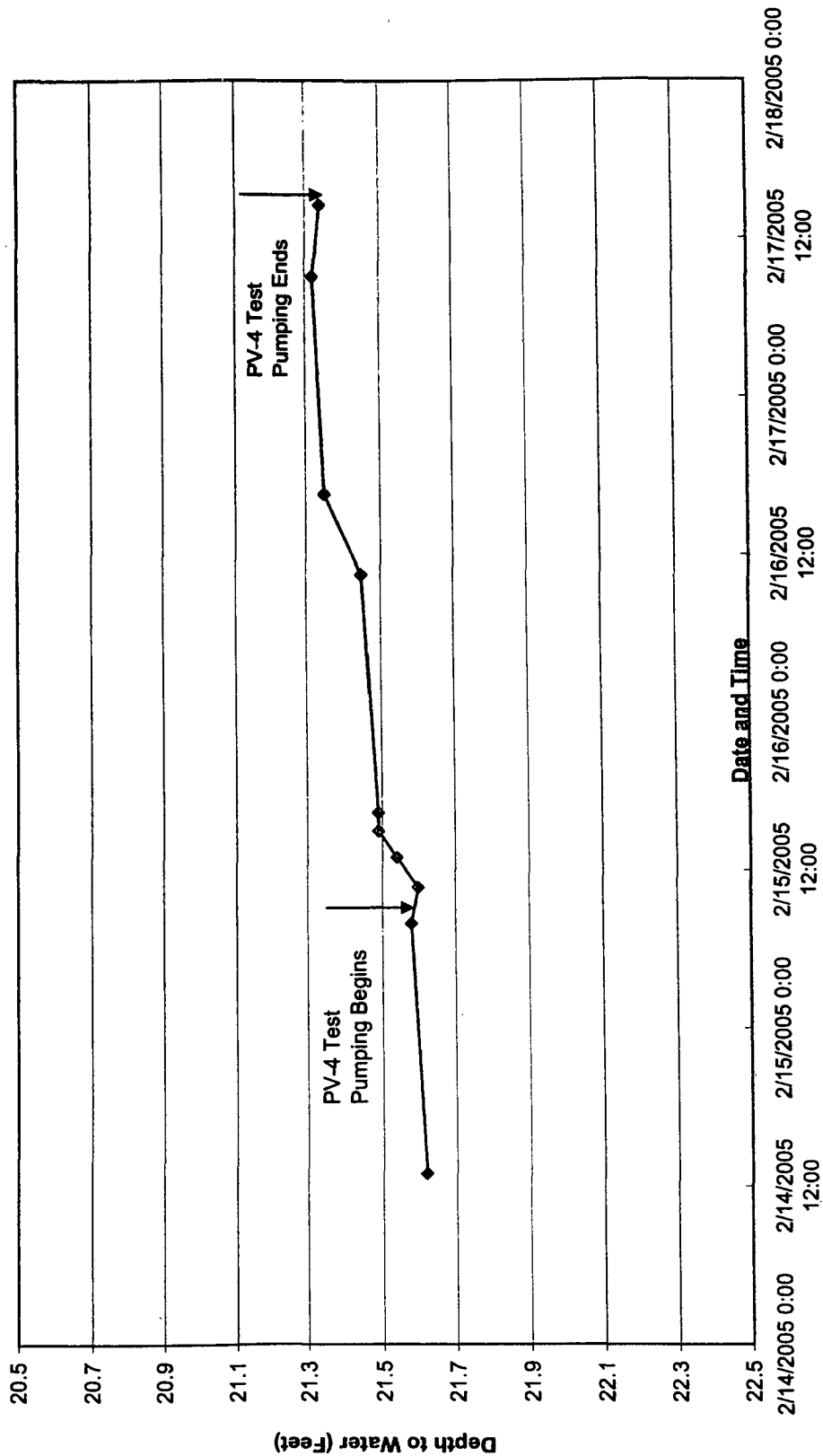
# Barometrically Corrected Height of Water Above Transducer and Cumulative Precipitation Vs. Time PV-2



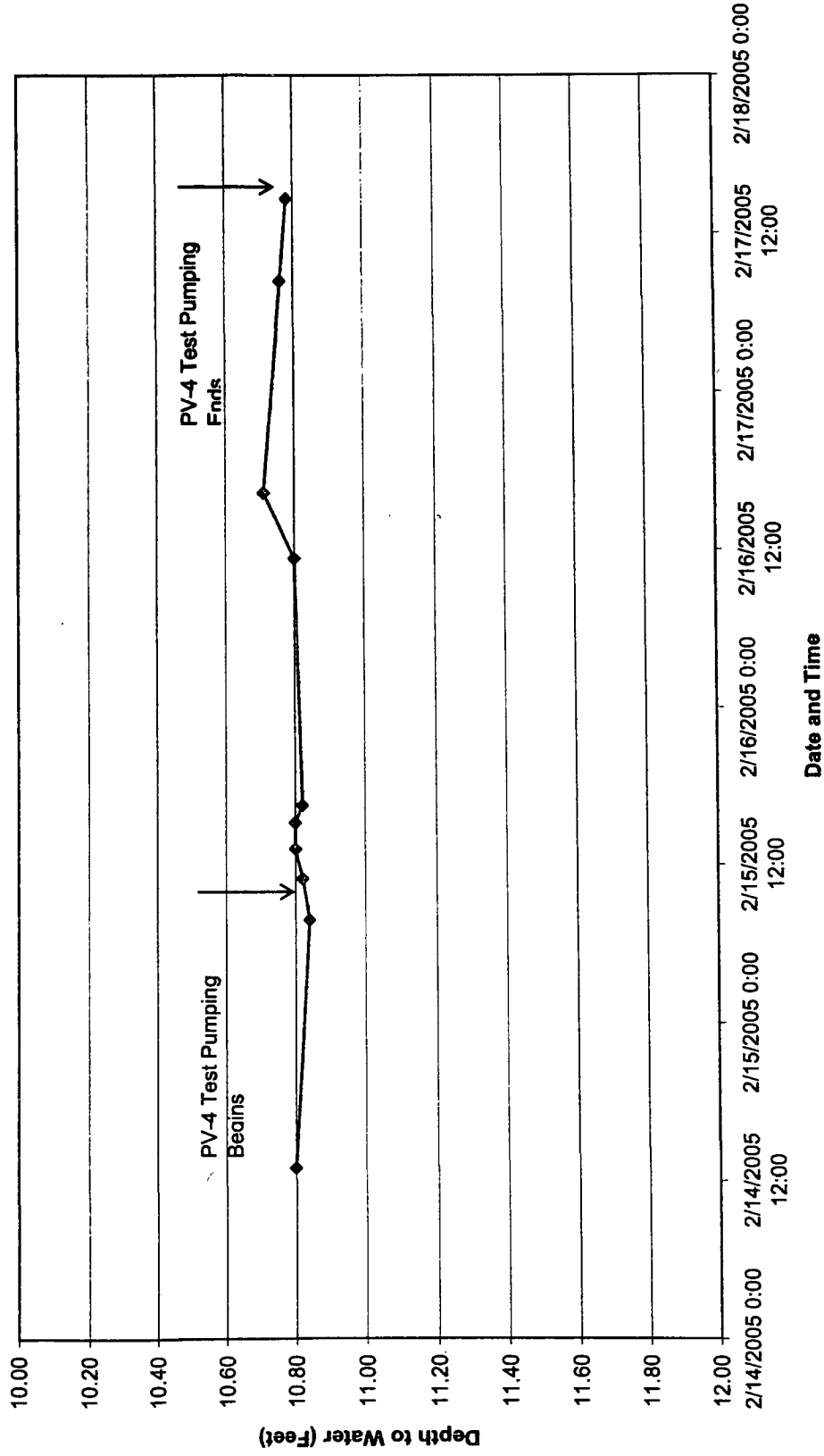
### Depth to Water Vs. Time Boring D



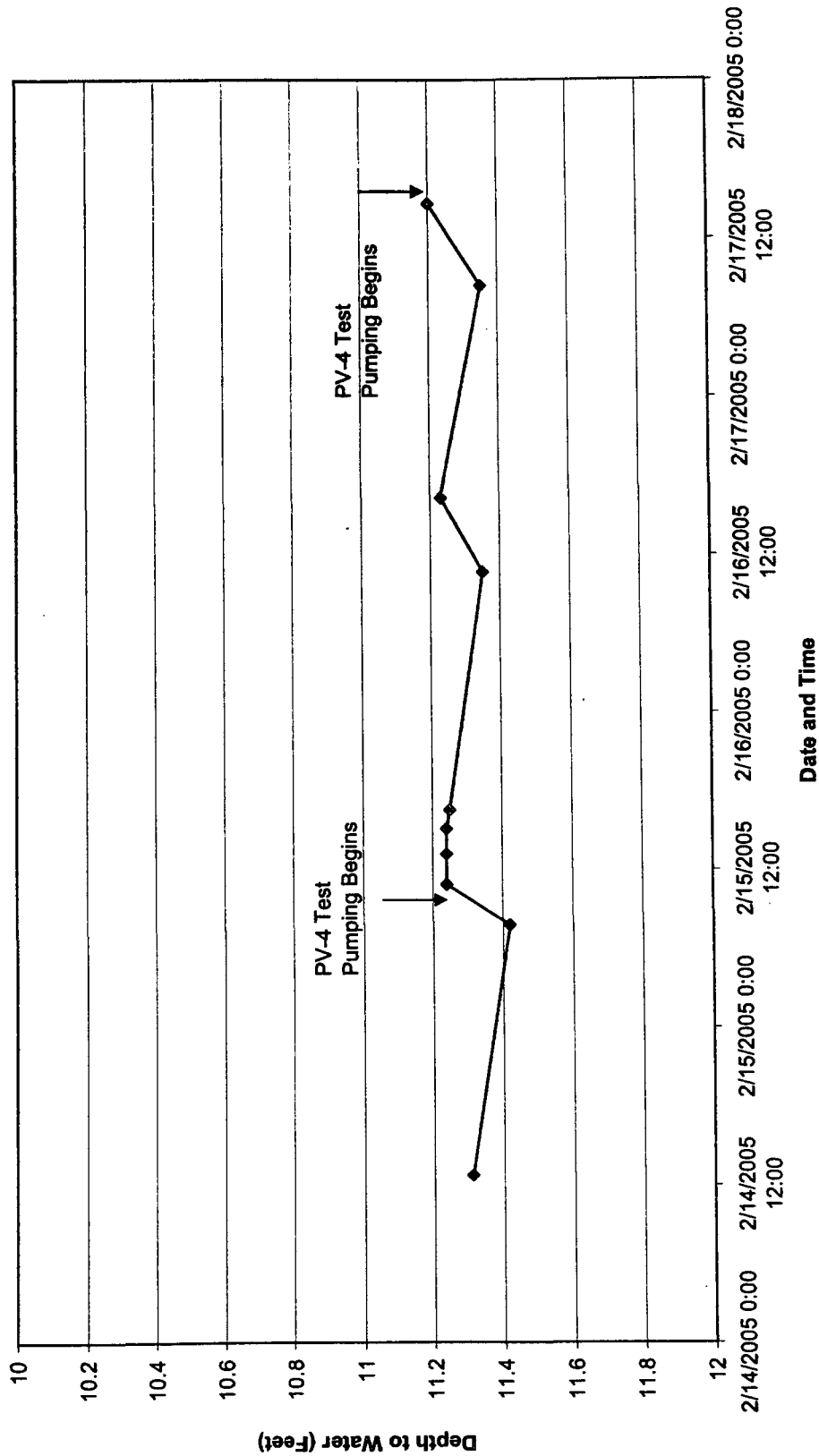
Depth to Water Vs Time  
OW-8



Depth to Water Vs. Time  
Boring C

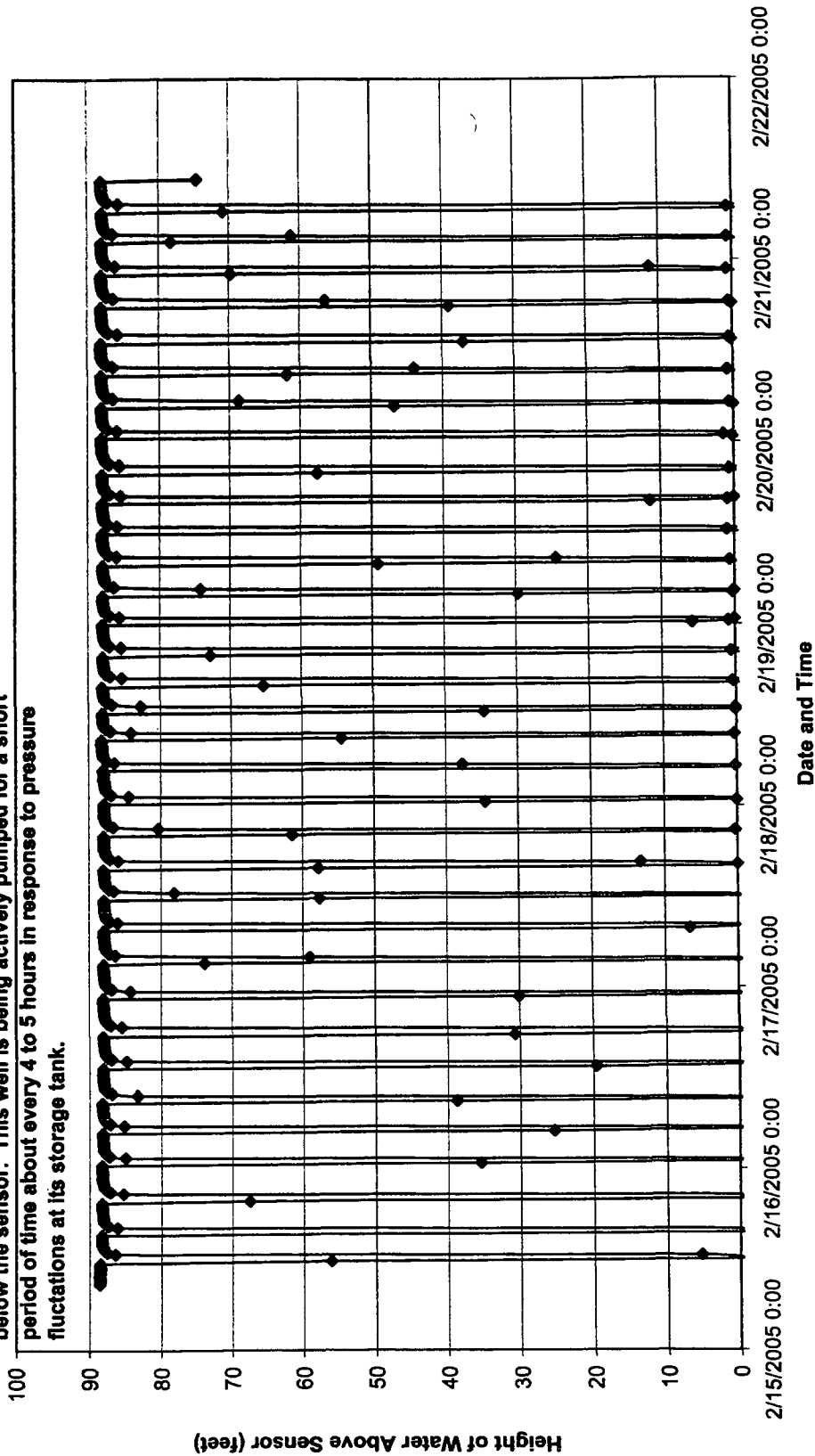


# Depth to Water Vs. Time PV-3

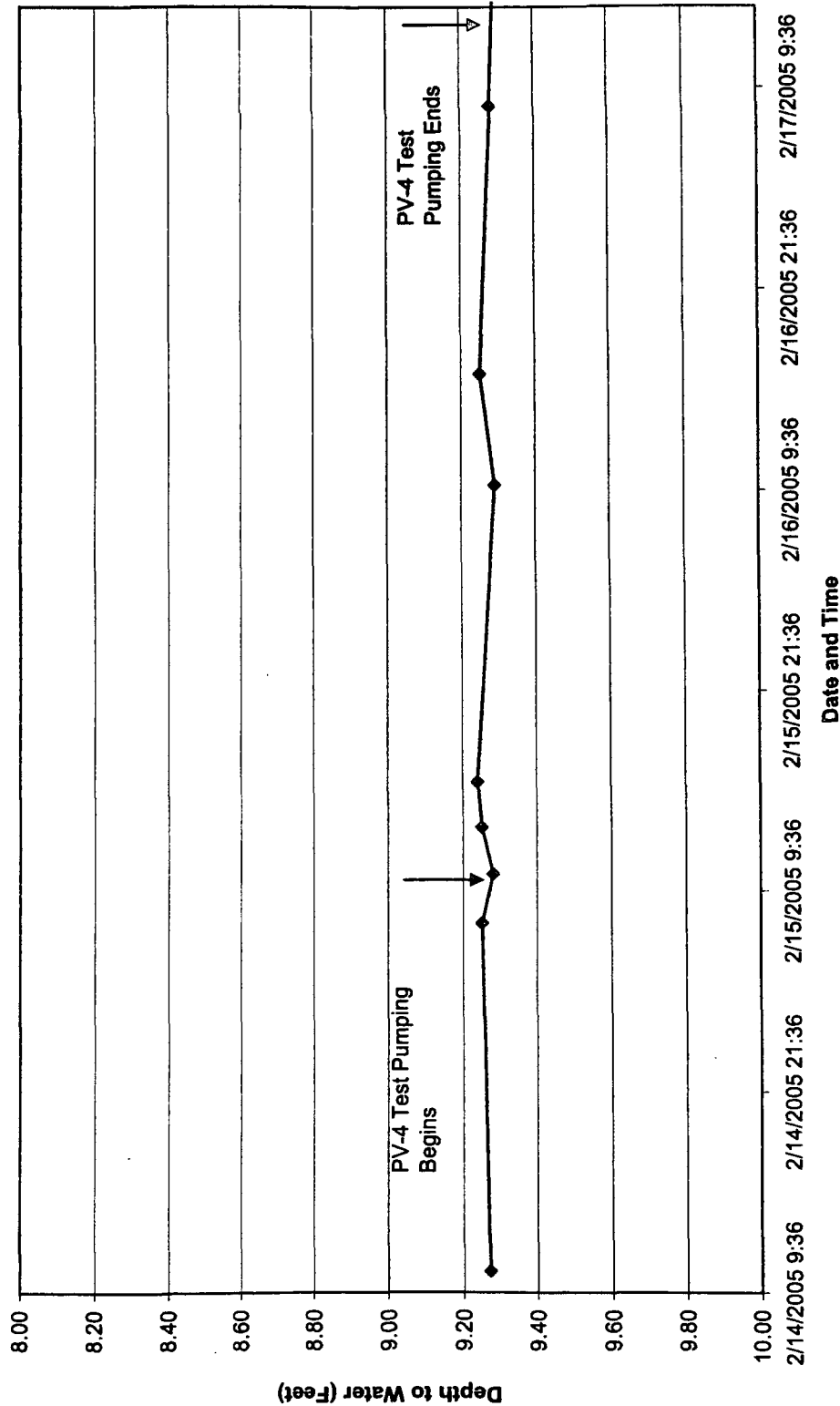


# Barometrically Corrected Height of Water Above Sensor (feet) Vs. Time PV-1

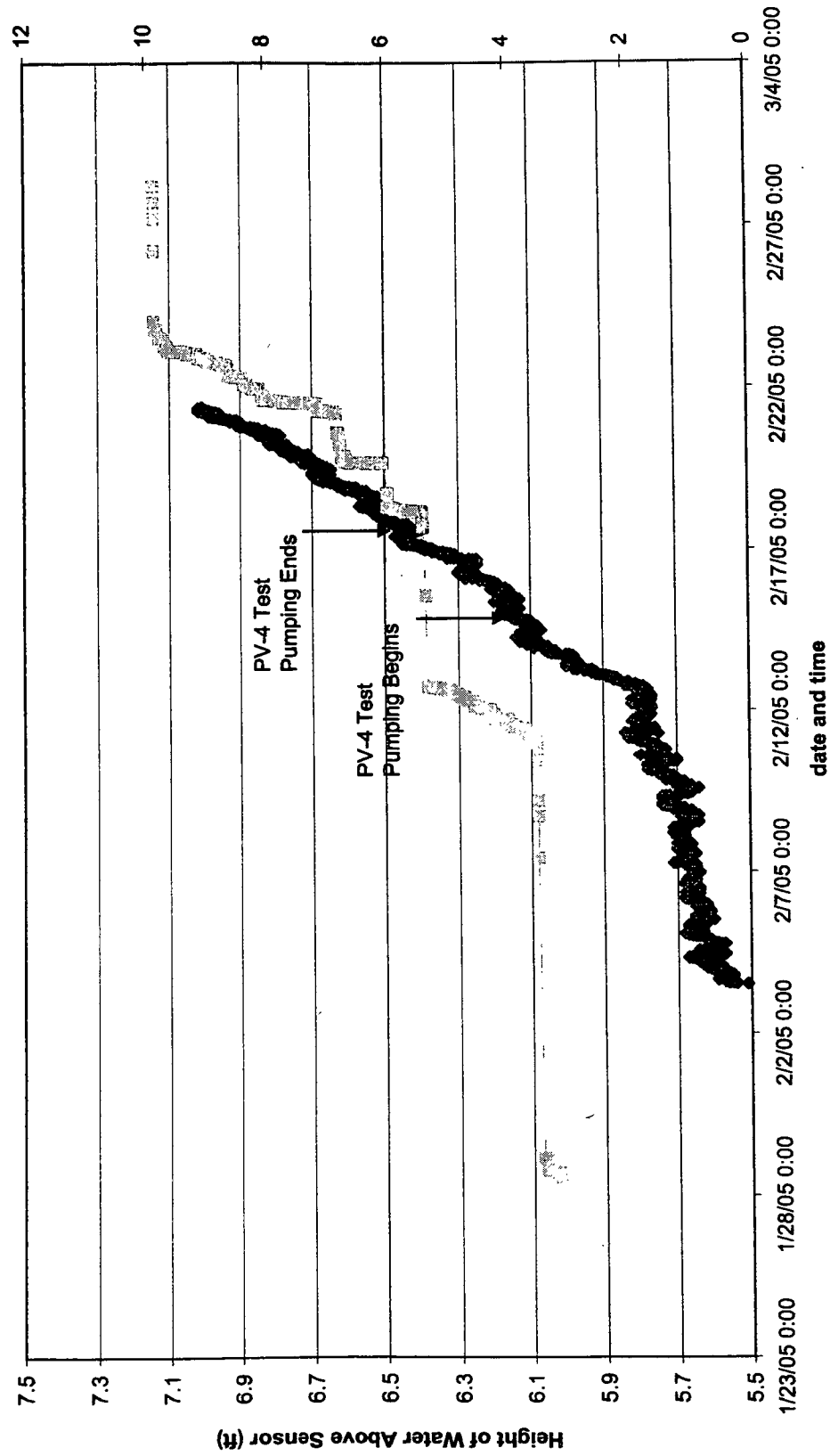
At a height of water above the sensor of 0 feet, the water level is below the sensor. This well is being actively pumped for a short period of time about every 4 to 5 hours in response to pressure fluctuations at its storage tank.



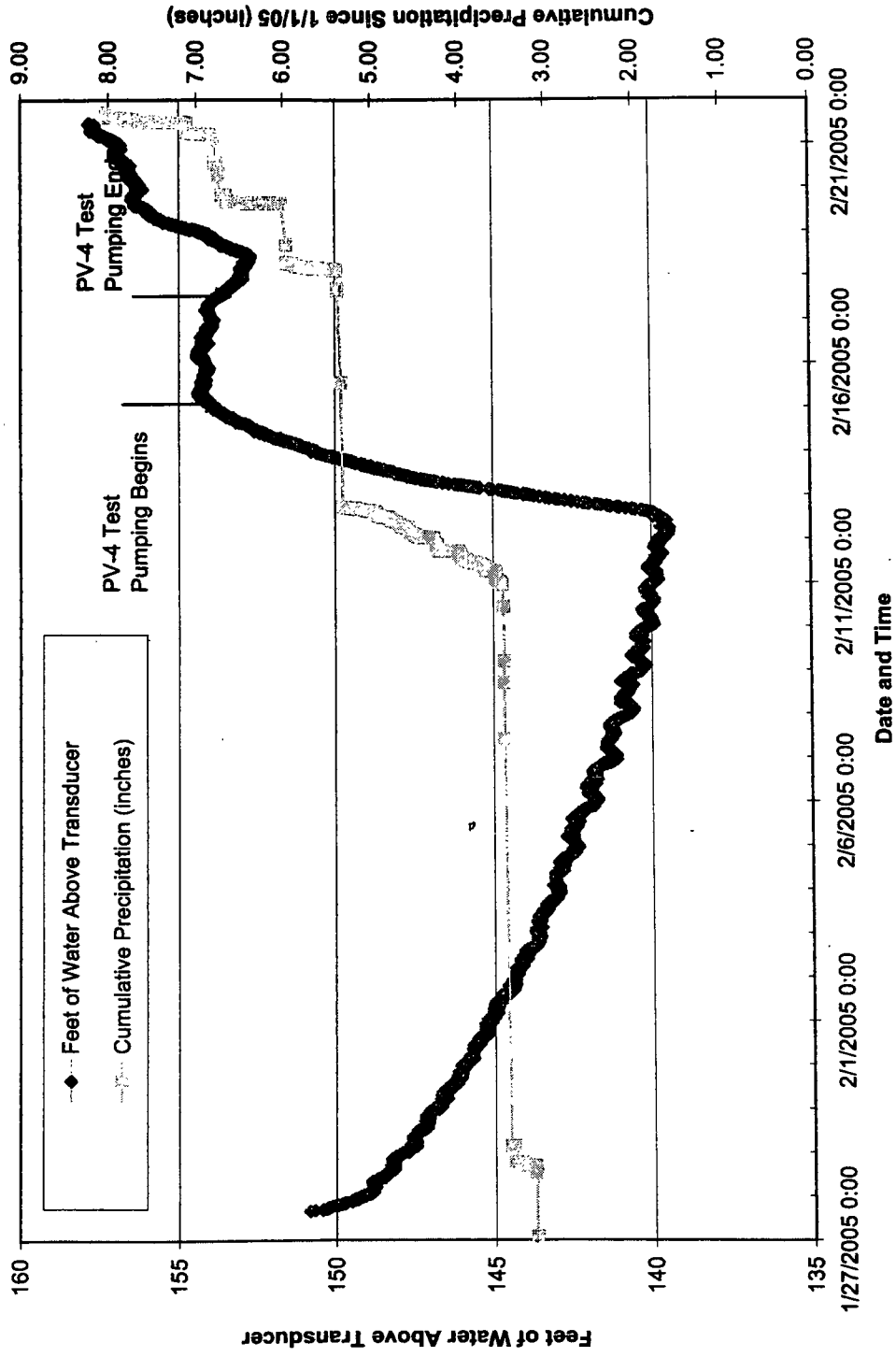
Depth to Water Vs. Time  
Boring E



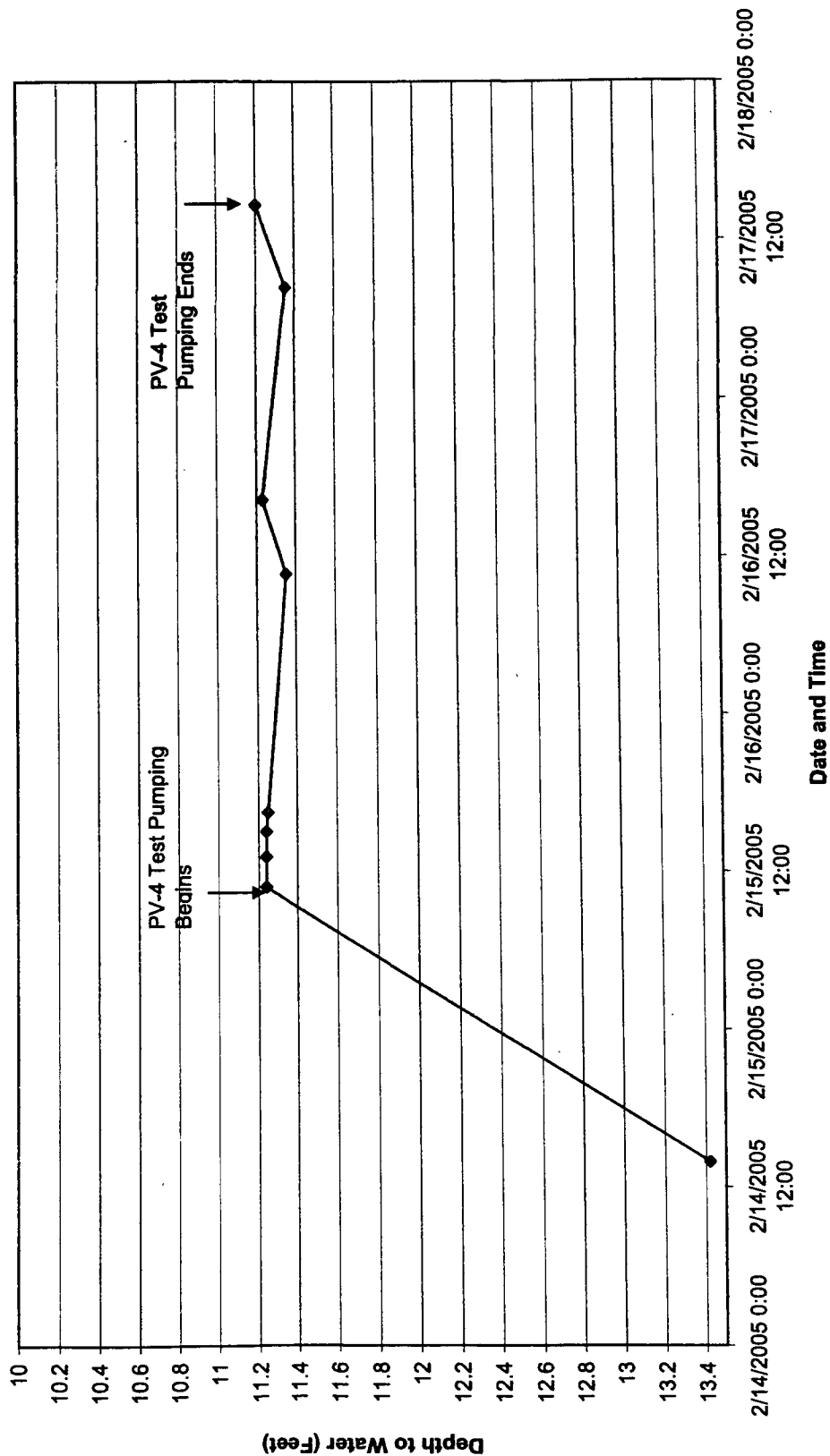
# Corrected Water Height Above Transducer and Cumulative Precipitation Versus Time OW-7



# Corrected Water Height Above Transducer and Cumulative Precipitation Versus Time, Johnson Well

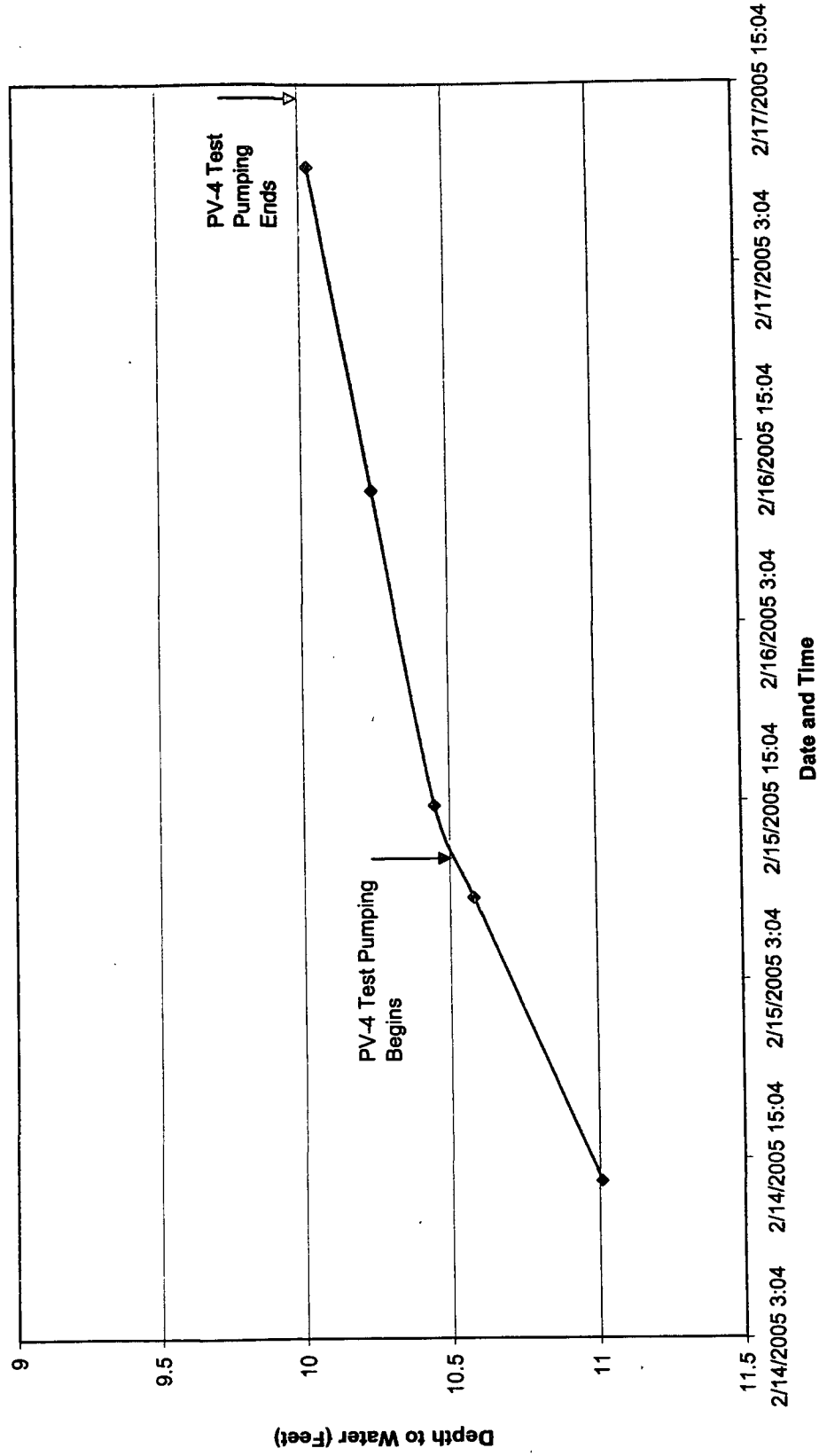


# Depth to Water Vs. Time Rancho Jamul Ecological Reserve Well

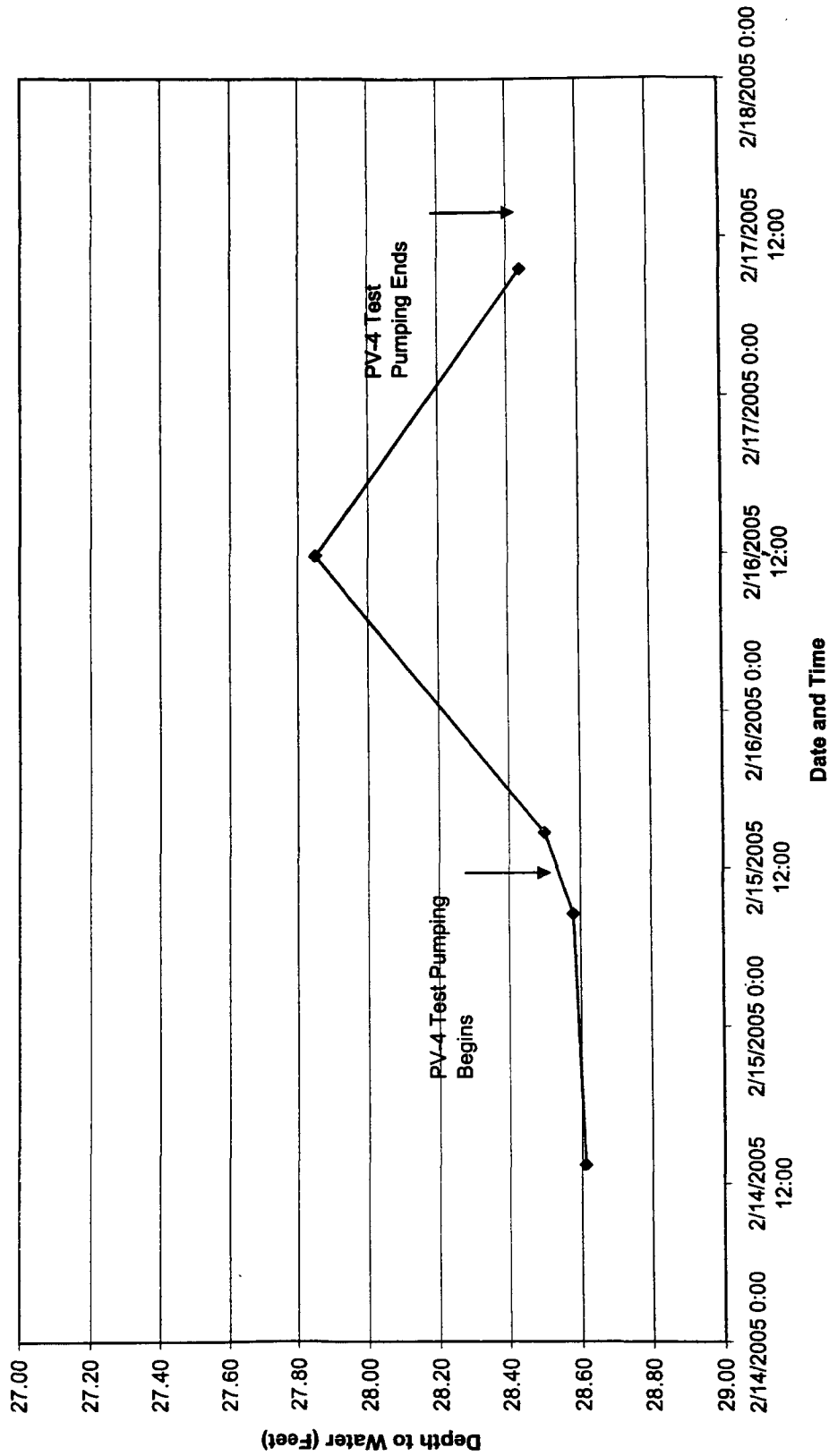


Wiedlin and Associates, Inc.  
Applications in Groundwater Science

### Depth to Water Vs. Time Hollenbeck Canyon Wildlife Refuge Well



Depth to Water Vs. Time  
Rancho Jamul Road Well



**Wiedlin & Associates, Inc.**  
*Applications in Groundwater Science*

**Appendix C-2**  
**Step Drawdown Tests**

**Wiedlin & Associates, Inc.**  
*Applications in Groundwater Science*

Step drawdown tests were conducted at two wells, PV-1 and PV-2, by Earth Tech in 2003 and were analyzed by Wiedlin & Associates, Inc. (W&A). A third step drawdown test was conducted by W&A in October 2004 at well PV-4. The objective of the step drawdown tests were to assess well yield. Transmissivity data were derived from the step drawdown data at PV-1 and PV-2 before the constant discharge test at well PV-4 was conducted. Transmissivity was calculated from the step drawdown data at PV-4 as a means of comparing results with well PV-2. However, the best estimate of transmissivity is derived from the 53-hour constant discharge test conducted at PV-4. Data from this test provides the best measure of aquifer performance because the well is pumped at the highest rate and for the greatest duration than any other test. Therefore, the constant discharge test at PV-4 induced the greatest hydraulic stress on the aquifer than any of the other tests.

PV-1 was tested first and found to have limited production capacity. As a result the test was terminated shortly after the second step, at 20 gallons per minute (gpm) was initiated. Drawdown data from the first step was treated as a constant discharge test and analyzed using the Theis method and the aquifer test software package AquiferWin32 Version 2 (Environmental Simulations, 2001).

PV-2 proved to be a higher yielding well than PV-1 and four pumping steps were successfully completed. Data from Earth Tech's drawdown graph were manually measured and entered into AquiferWin32. Test data were analyzed using the Birsoy-Summers and Eden-Hazel methods of analysis for step drawdown data.

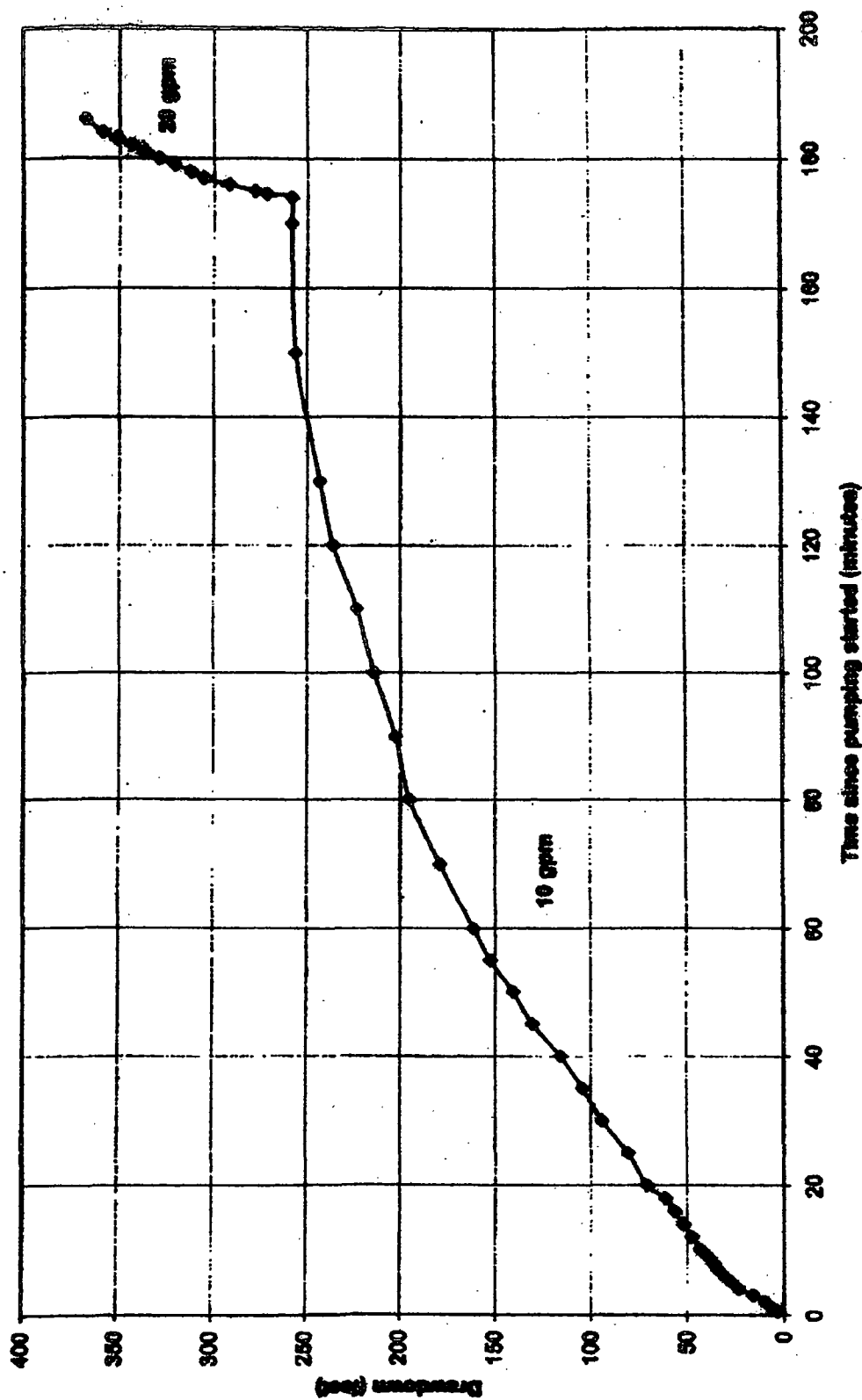
PV-4 also proved to be a high yielding well and four pumping steps were also successfully completed. Test data were analyzed using the Eden-Hazel method for step drawdown data.

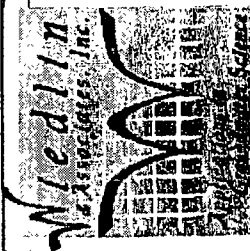
Relevant well data for processing the aquifer test information are compiled along with resultant estimates of transmissivity (Table B-1). Earth Tech's original drawdown charts for each aquifer test are provided along with analytical plots developed from AquiferWin32. For PV-2, plots are presented for both analytical methods and also include predicted drawdown plots based on the derived results.

**TABLE B-1**  
**AQUIFER TEST INFORMATION**

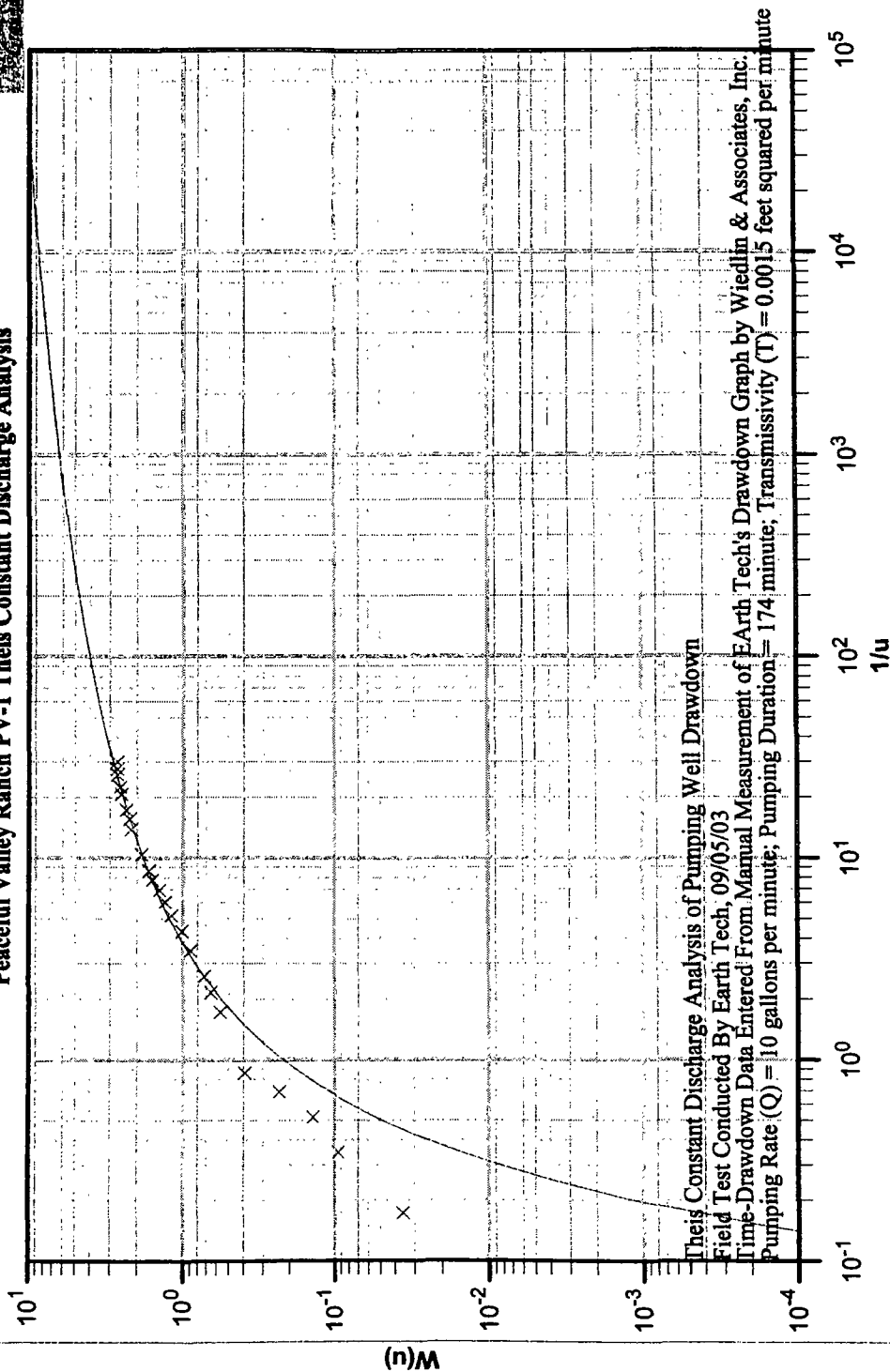
<b>Parameter</b>	<b>PV-1 Theis Analysis</b>	<b>PV-2 Eden Hazel Analysis</b>	<b>PV-4 Eden Hazel Analysis</b>
Well Depth	565	331	136
Static Water Level	27 feet	18 feet	27
Well Diameter	6 inches	6 inches	6 inches
Pumping Rate (gpm)	10	5, 10, 15, 21	16, 30, 47, 65
Transmissivity (ft <sup>2</sup> /min)	0.0015	0.27	1.0

FROM EARTH TECH, INC.  
12/03 REPORT TO RBF CONSULTING  
REGARDING PEACEFUL VALLEY RANCH  
P.V.1 (Doc's Well) Step-Drawdown test

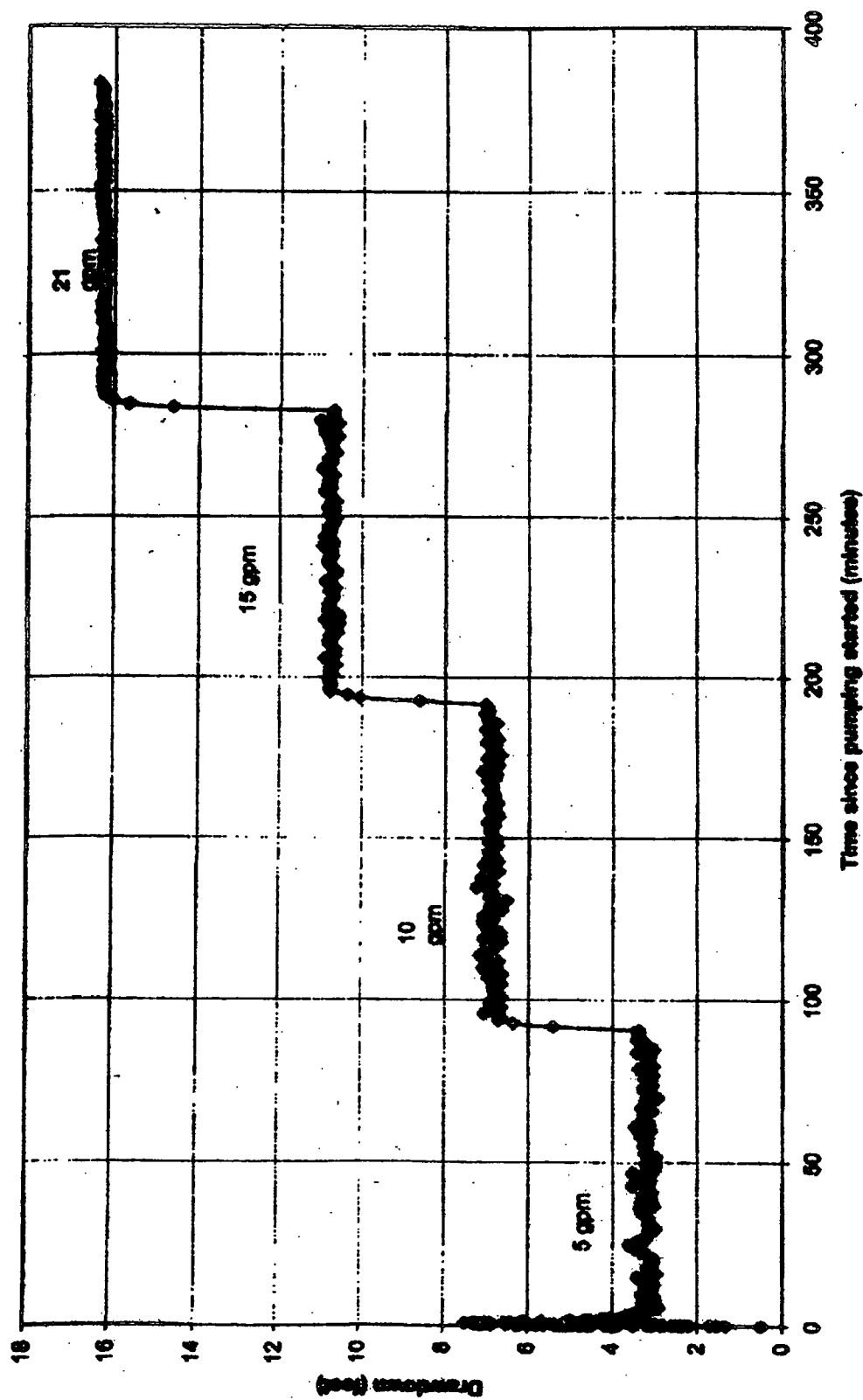




# Peaceful Valley Ranch PV-1 Theis Constant Discharge Analysis



FROM EARTH TECH, INC.  
 12/2/83 REPORT TO RBF CONSULTING  
 REGARDING PEACEFUL VALLEY RANCH (North Well) Step-Drawdown Test





# Peaceful Valley Ranch PV-2 Birsoy and Summers Step Drawdown Analysis

Birsoy Summers Analysis of Pumping Well Drawdown

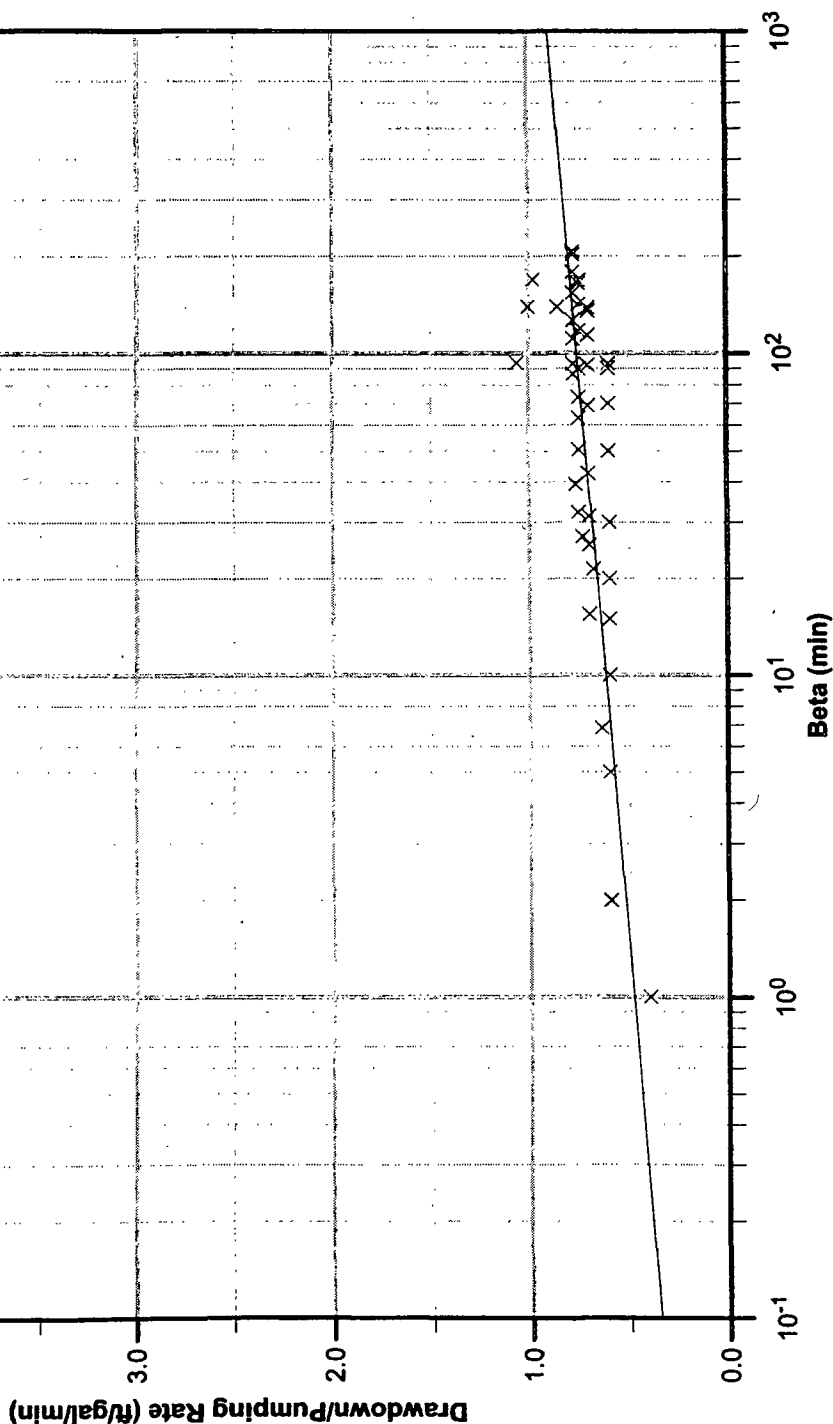
Field Test Conducted By Earth Tech, 10/17/03

Time Drawdown Entered From Manual Measurement of Earth Tech's Drawdown Graph By Wiedlin & Associates, Inc.

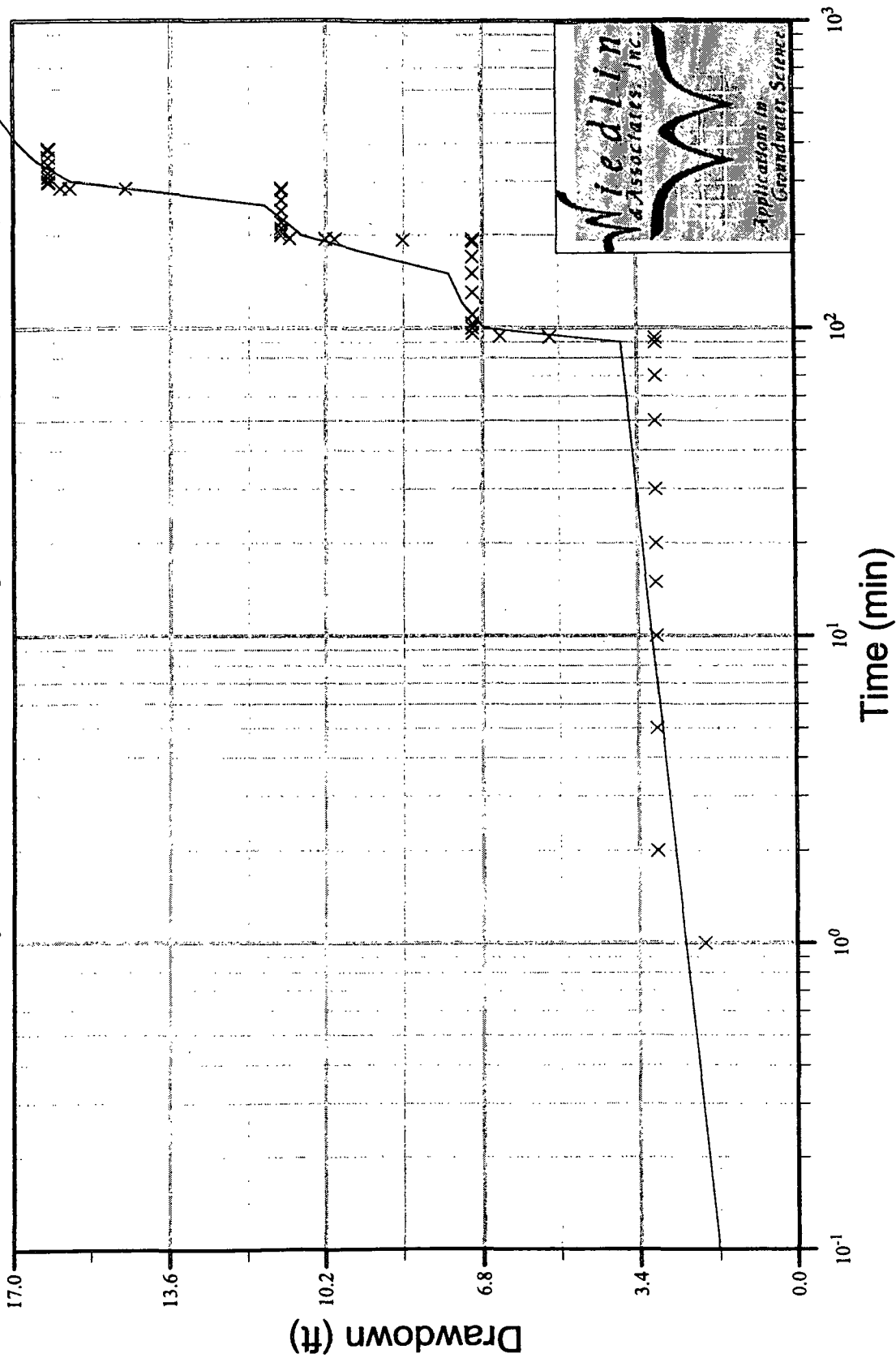
Four Pumping Steps; 5 gpm, 10 gpm, 15 gpm, 21 gpm. 90 minute steps

Transmissivity (T) =  $2.3/(4*7.48*pi*slope\ of\ line)$

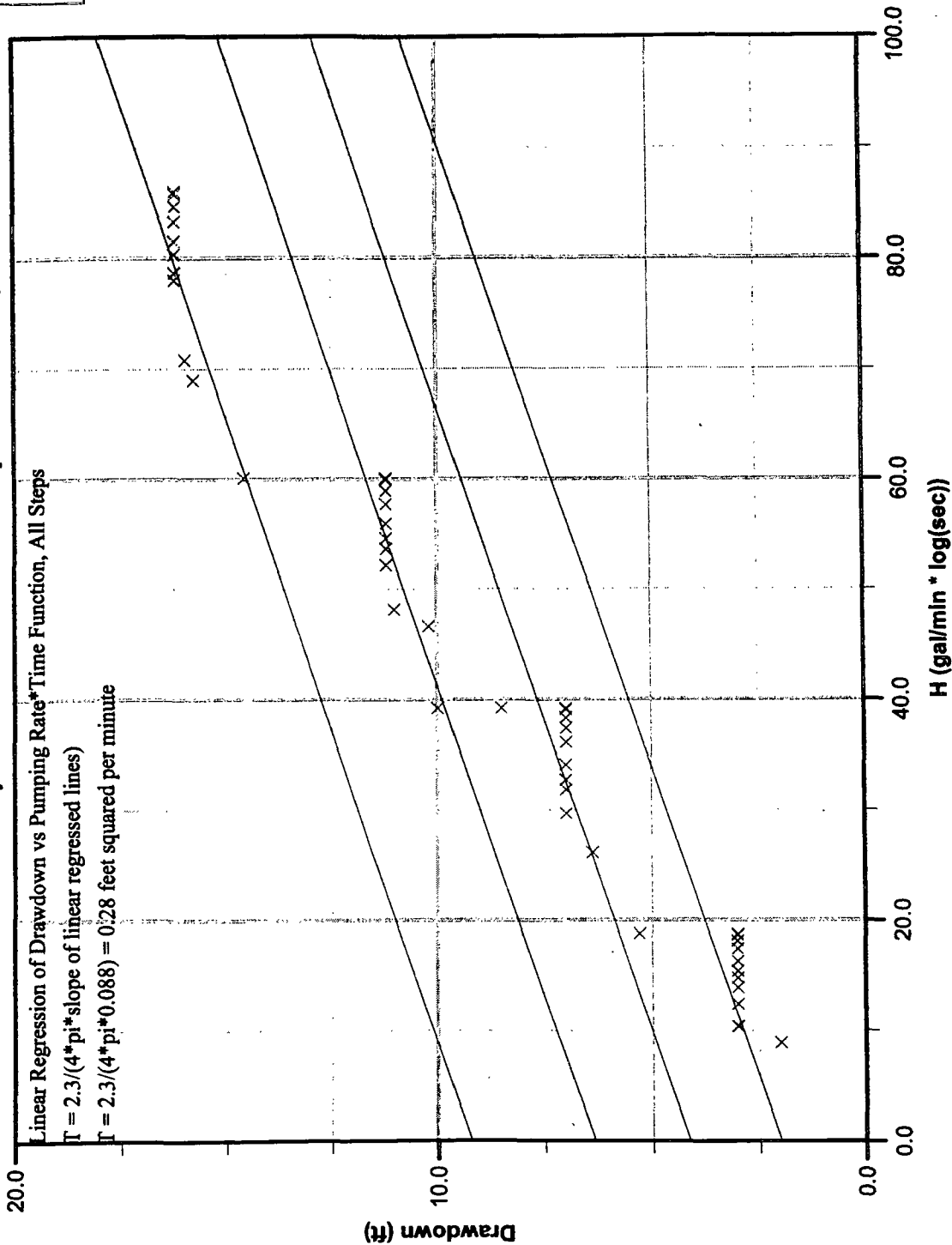
$T = 2.3/(4*7.48*pi*0.137) = 0.18$  feet squared per minute



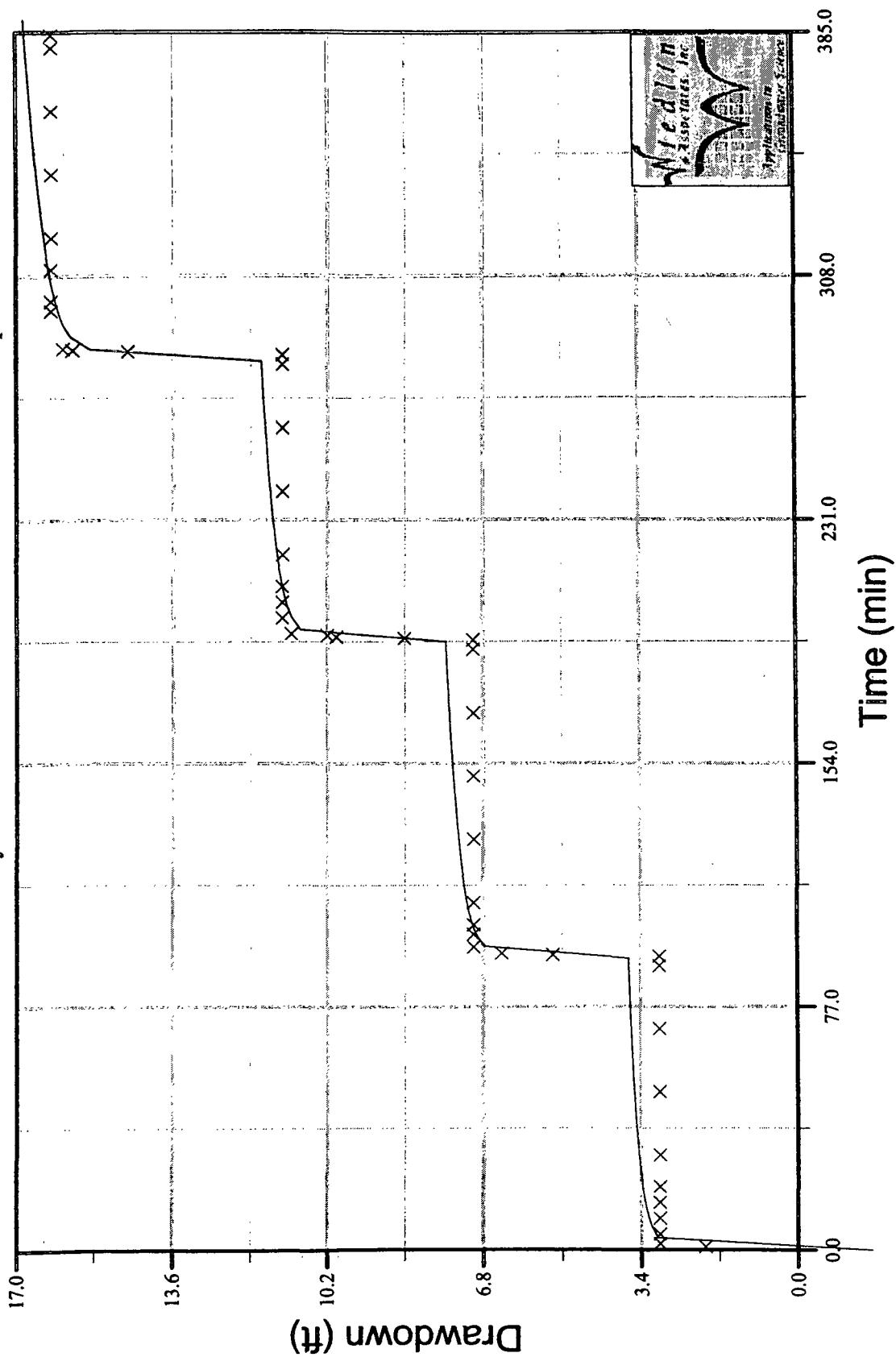
# Peaceful Valley Ranch PV-2 Predicted Well Response From Birsoy Summers Analysis

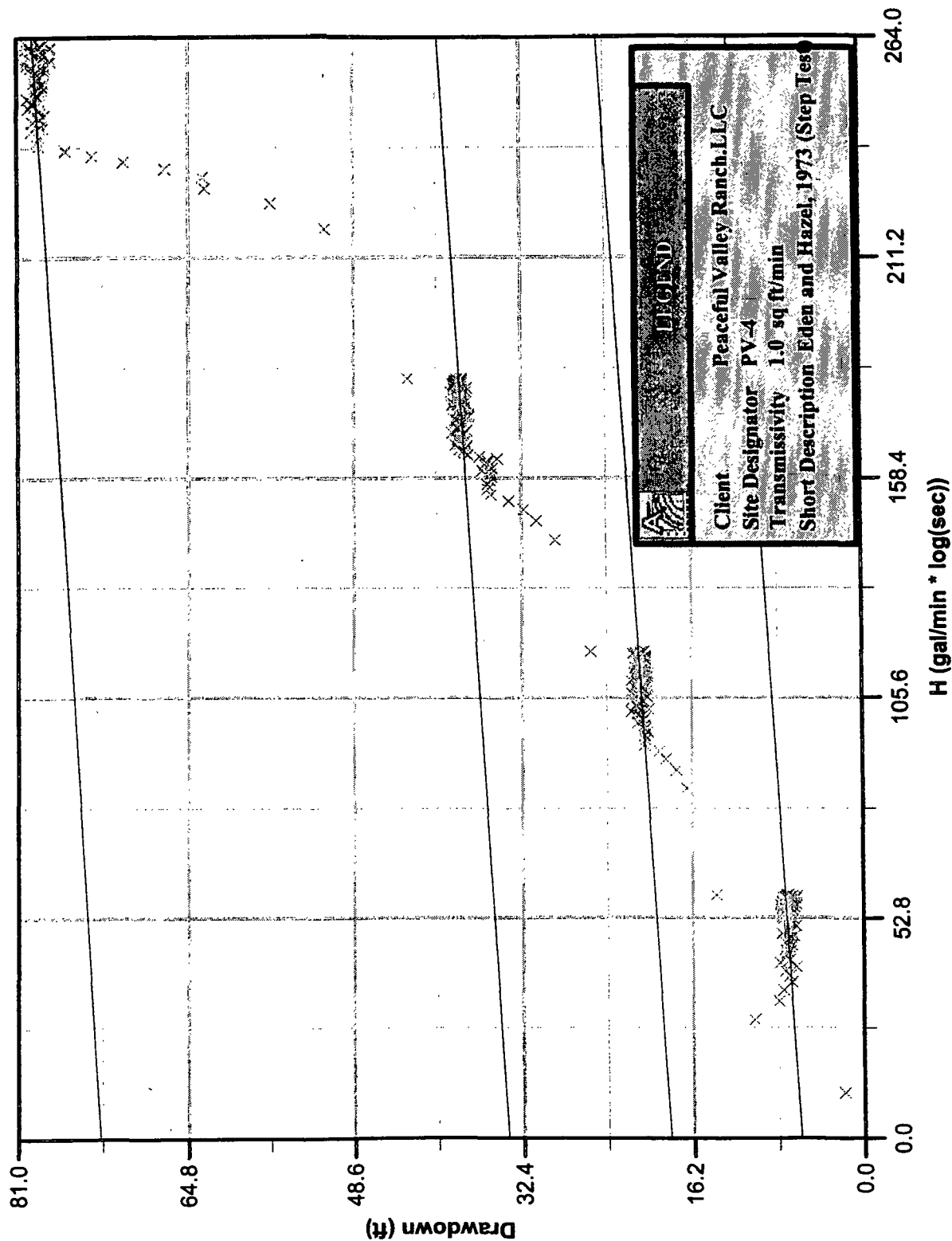


# Peaceful Valley Ranch PV-2 Eden and Hazel Step Drawdown Analysis

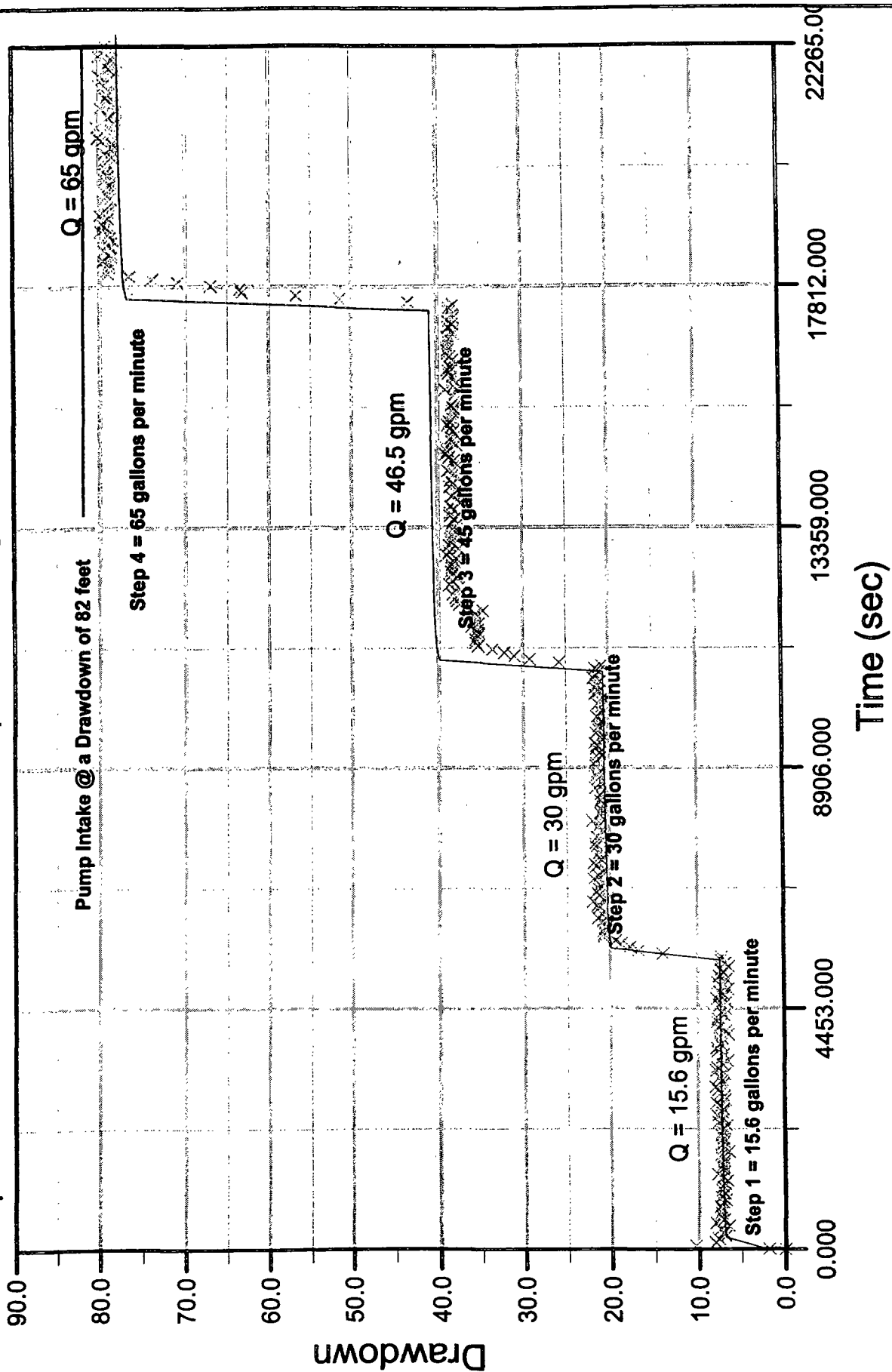


Peaceful Valley Ranch PV-2 Eden and Hazel Predicted Well Response

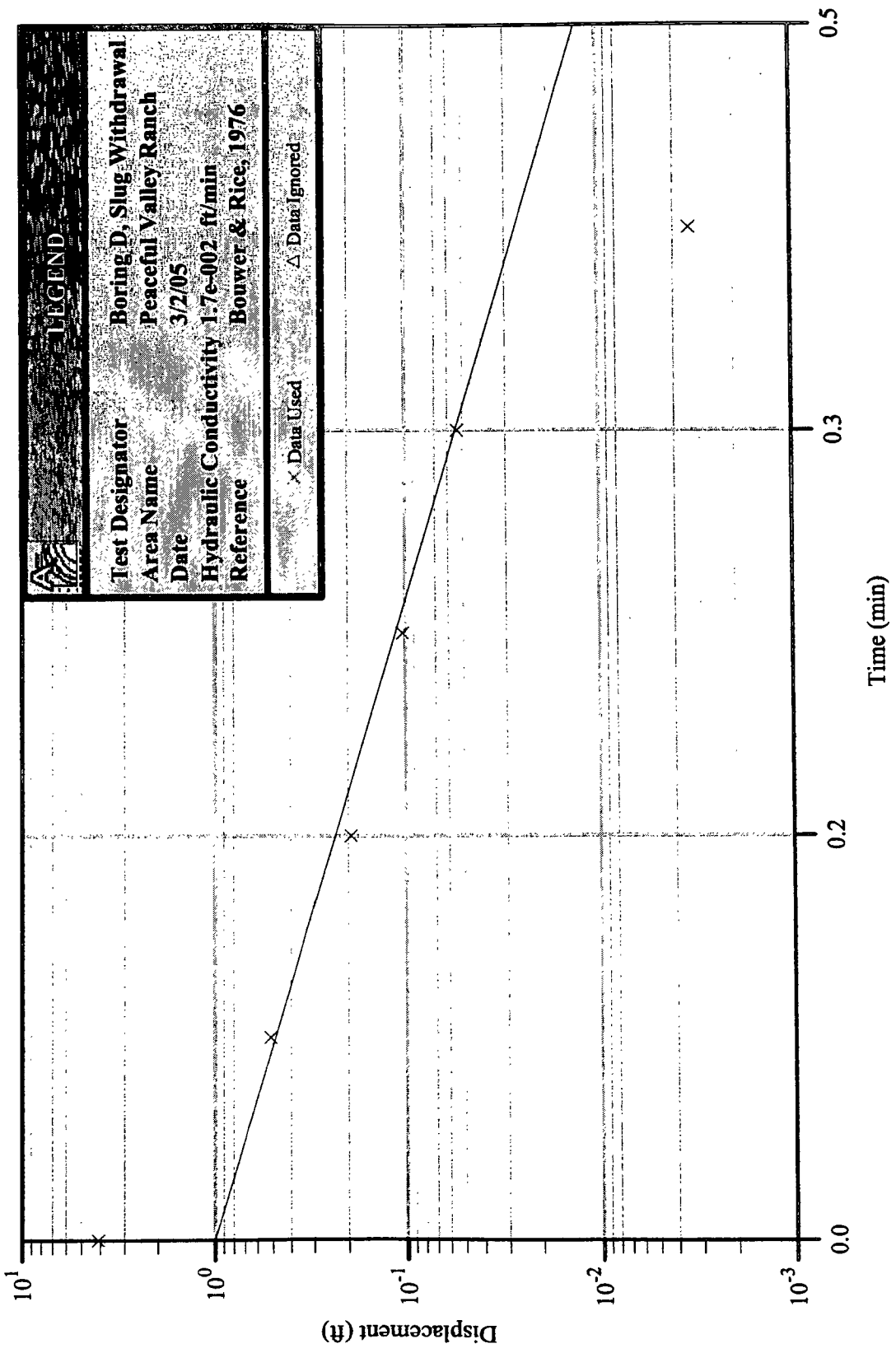


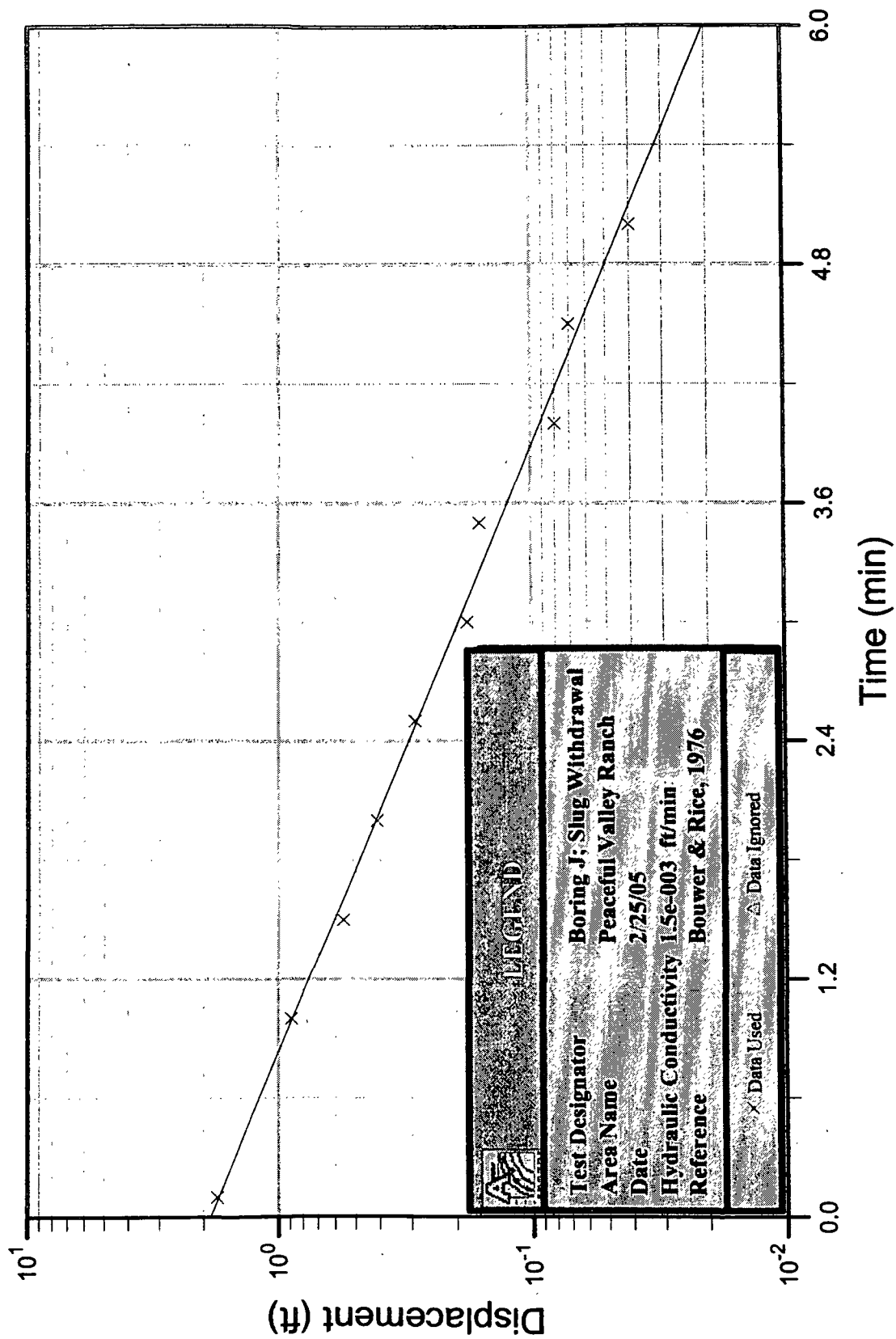


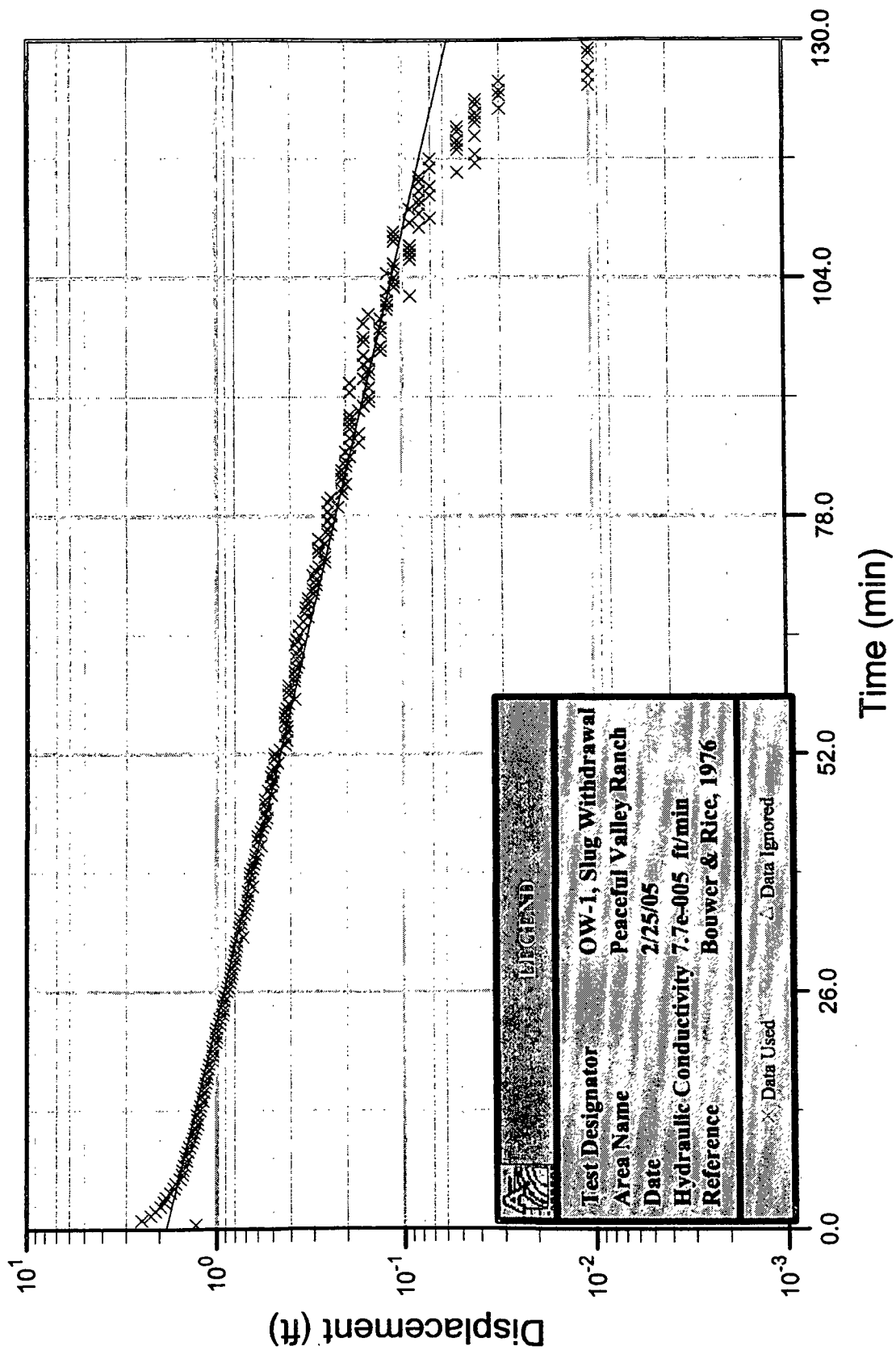
PV-4 Step Drawdown Test Data and Predicted Response Assuming a Transmissivity of 1.0 square foot per minute

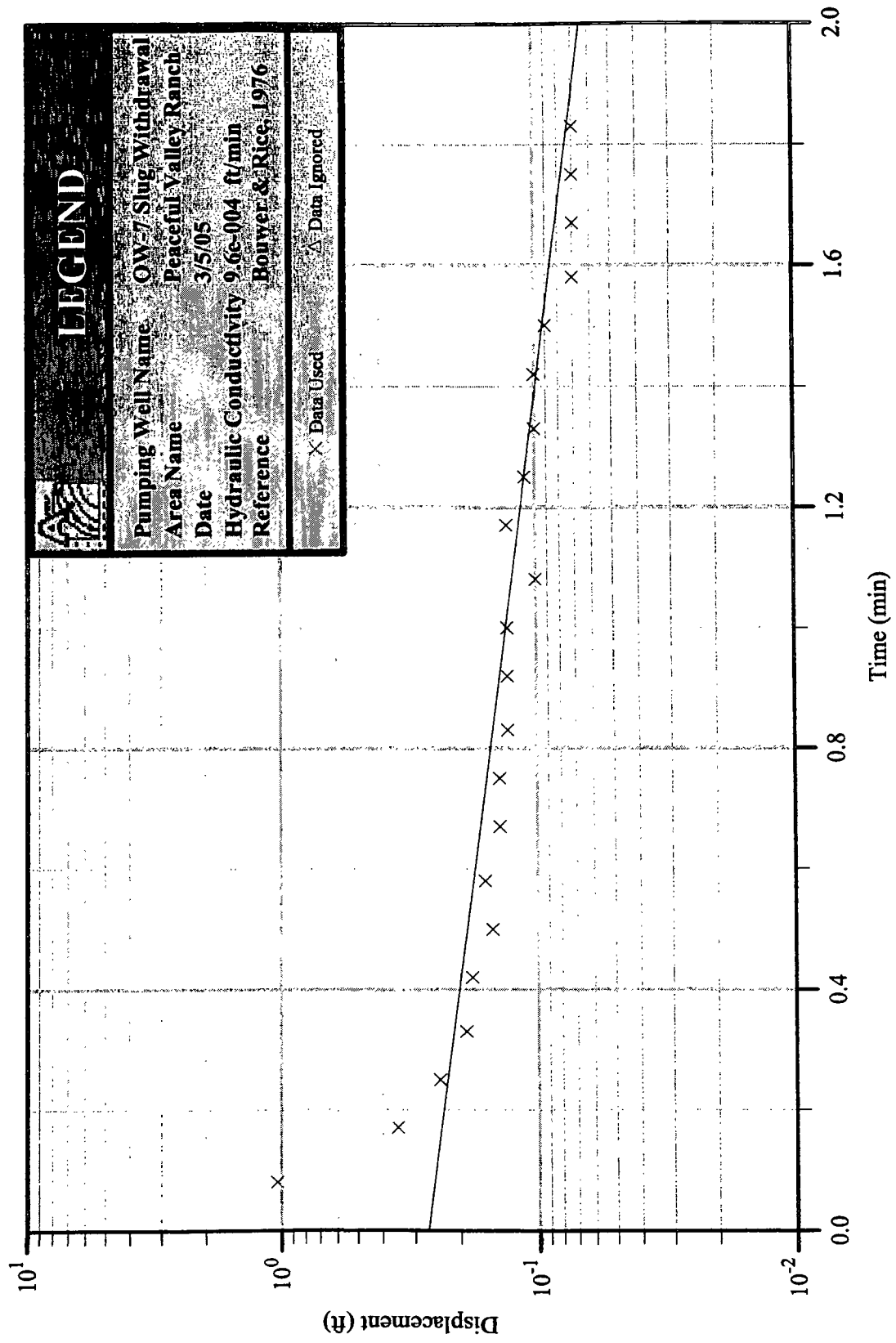


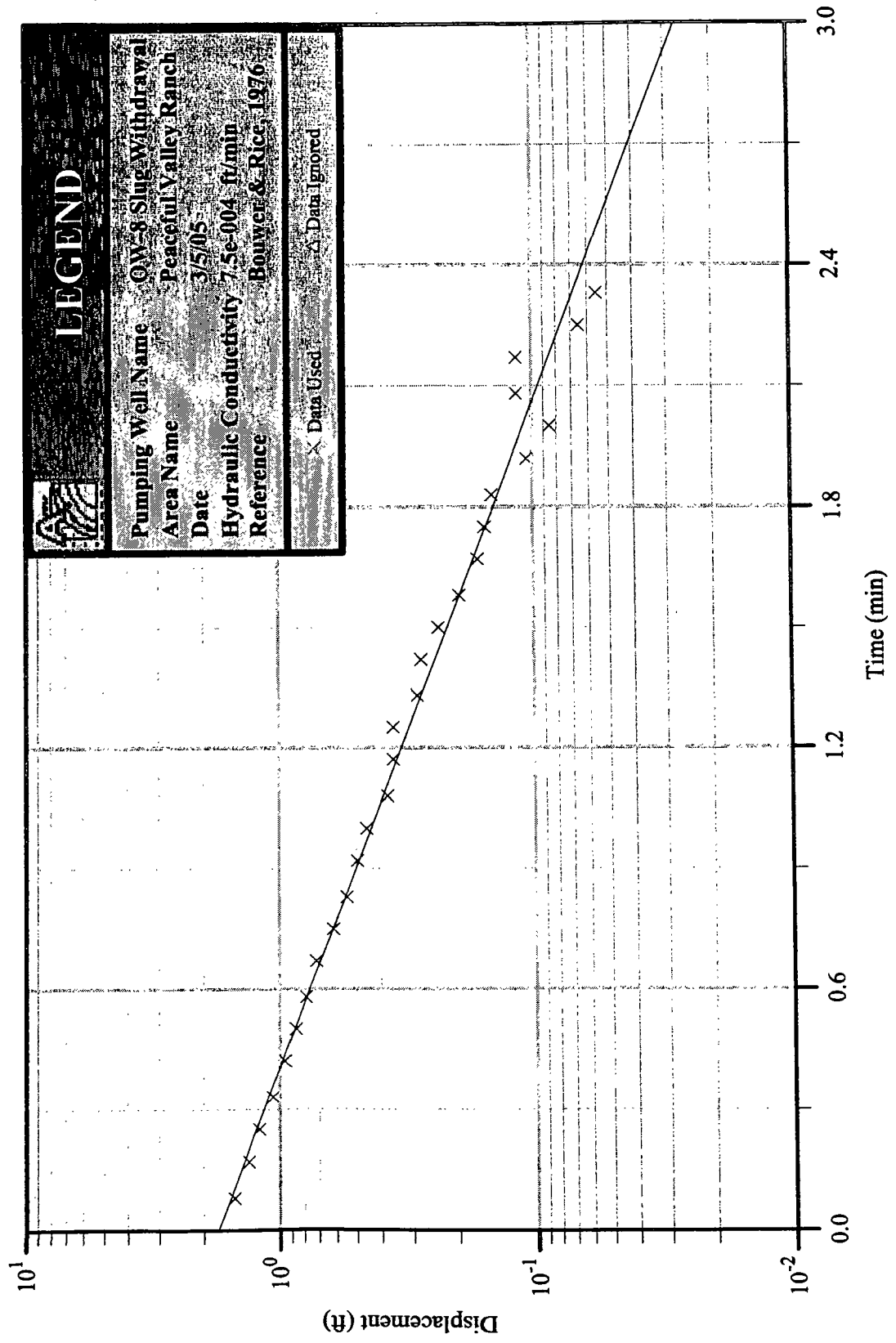
**Appendix C-3**  
**Slug Tests**

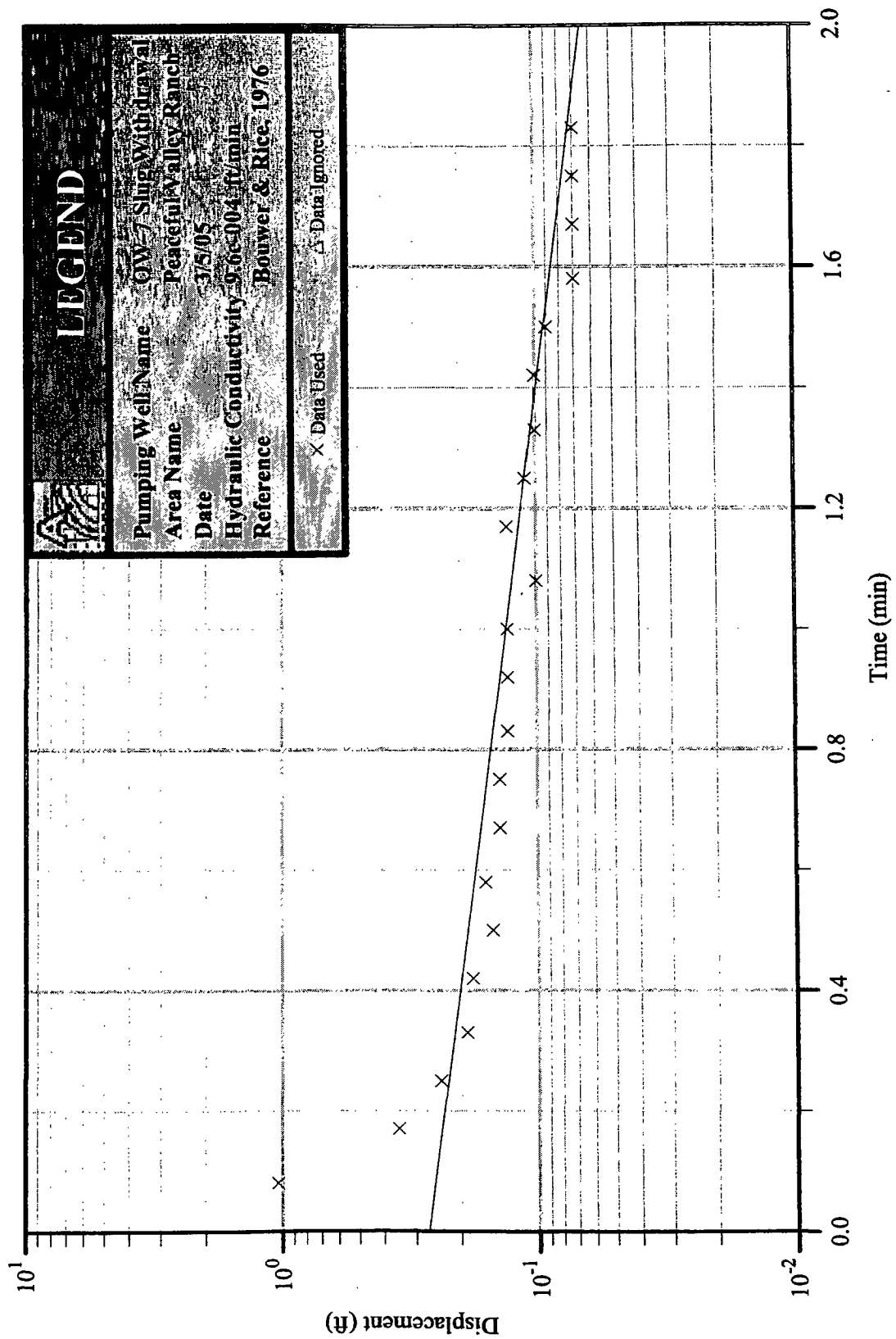


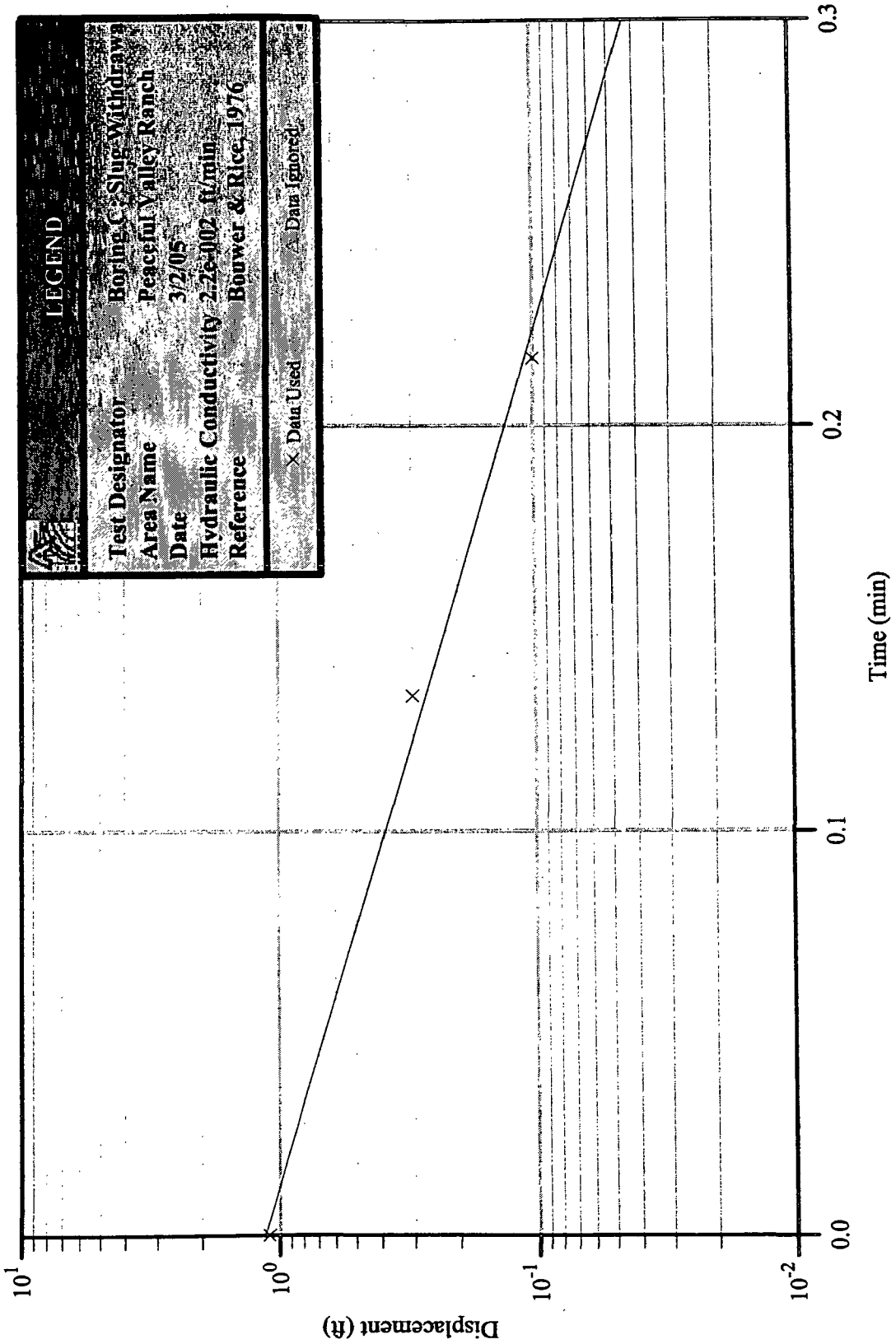


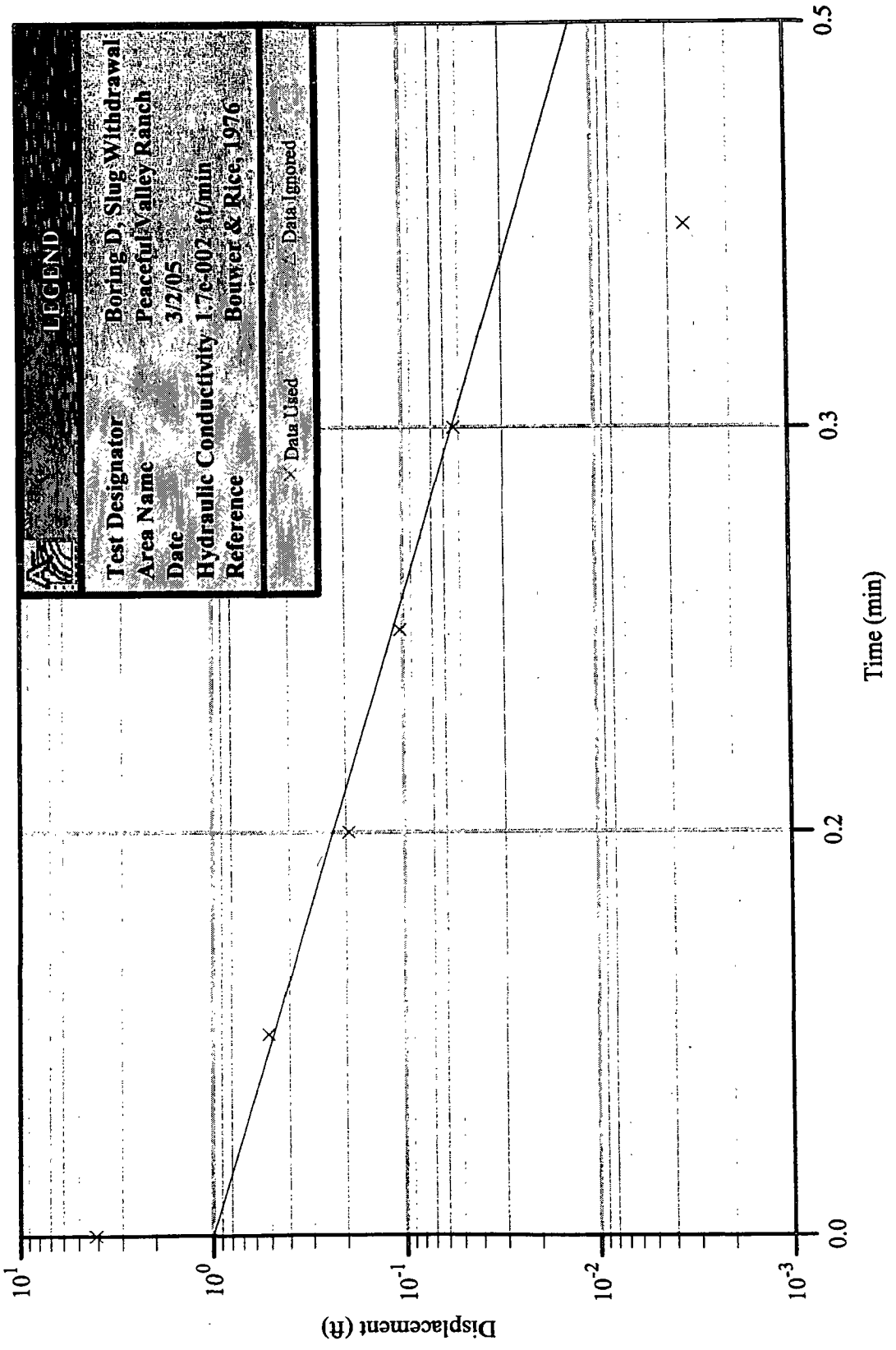


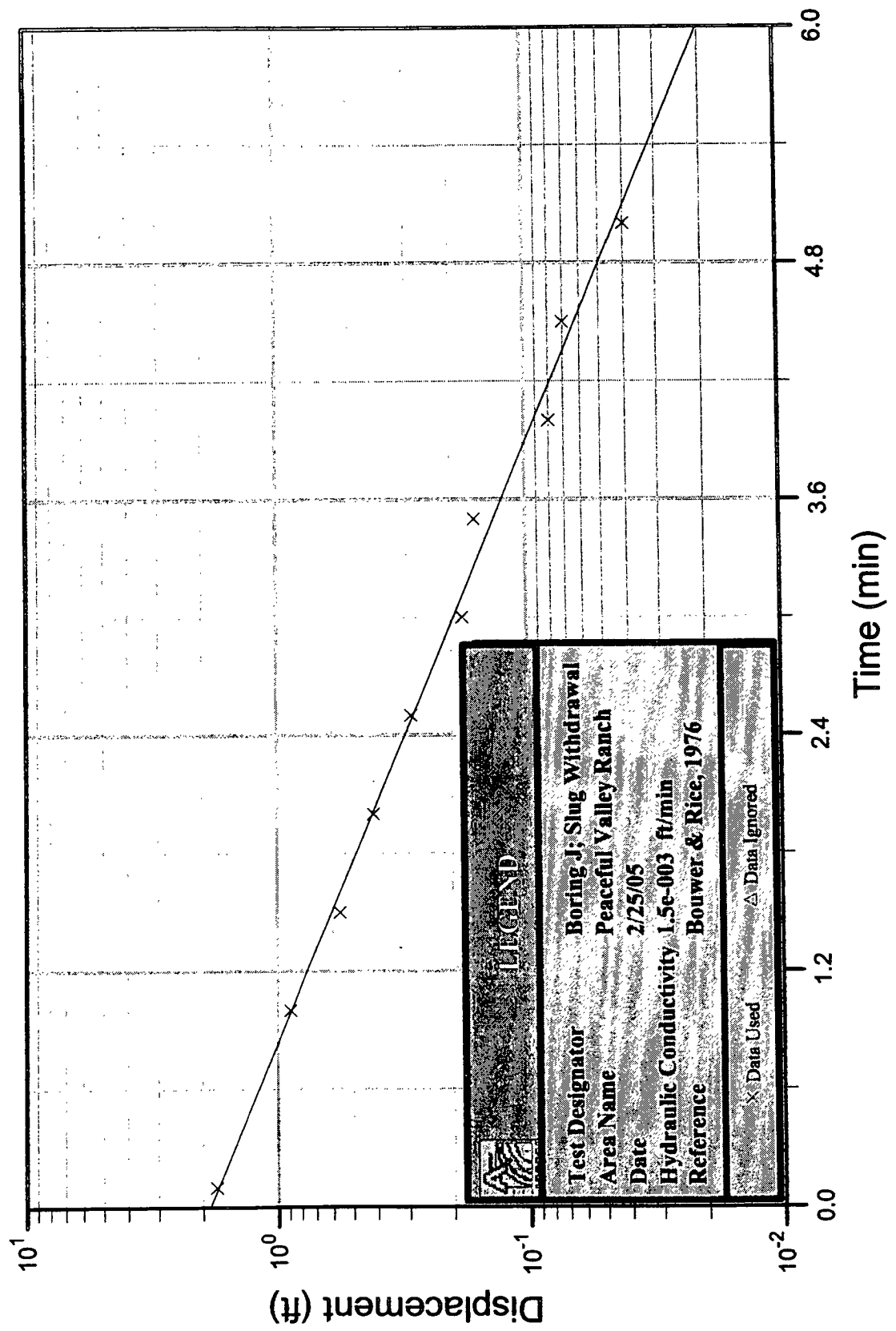


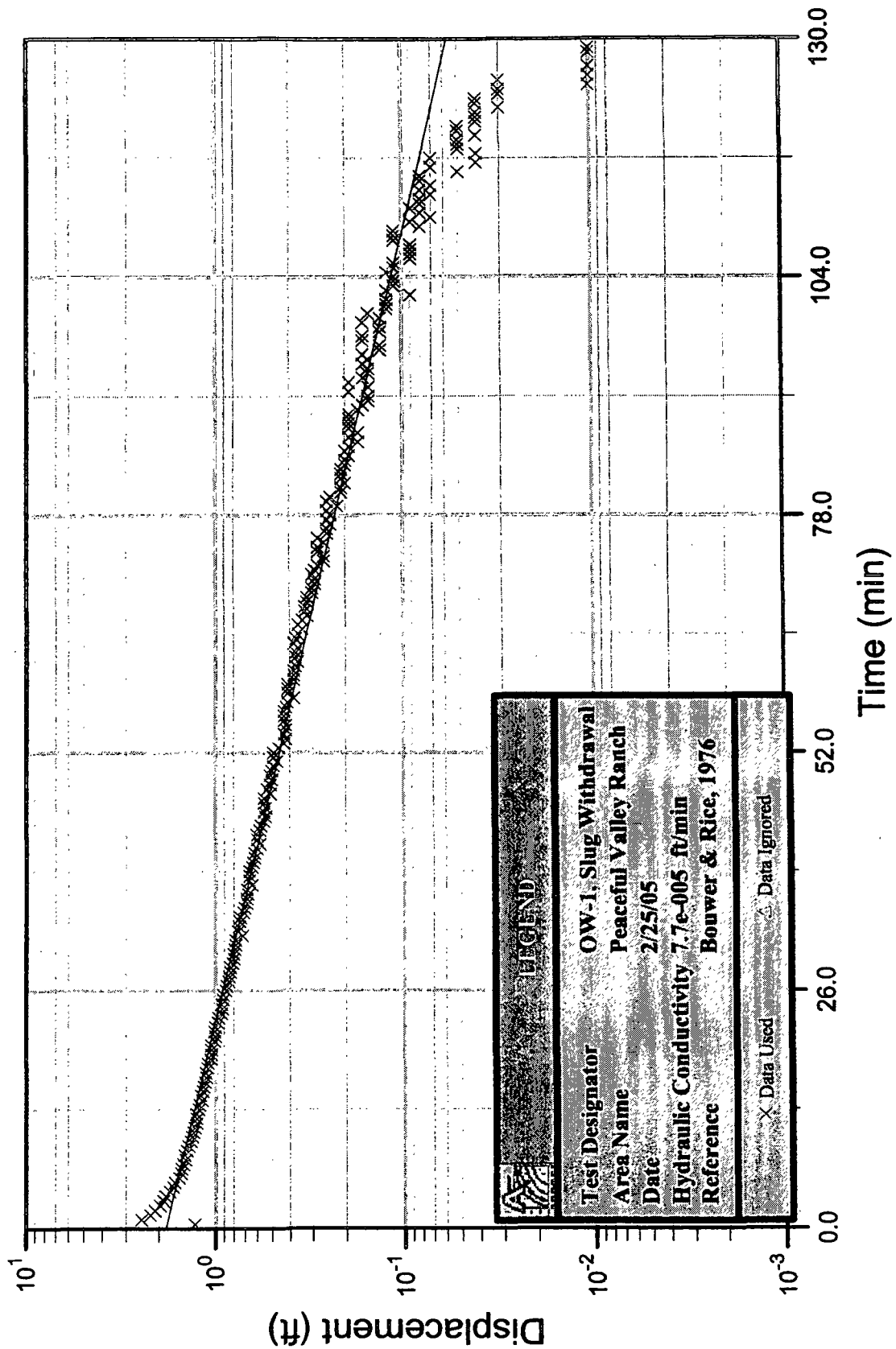


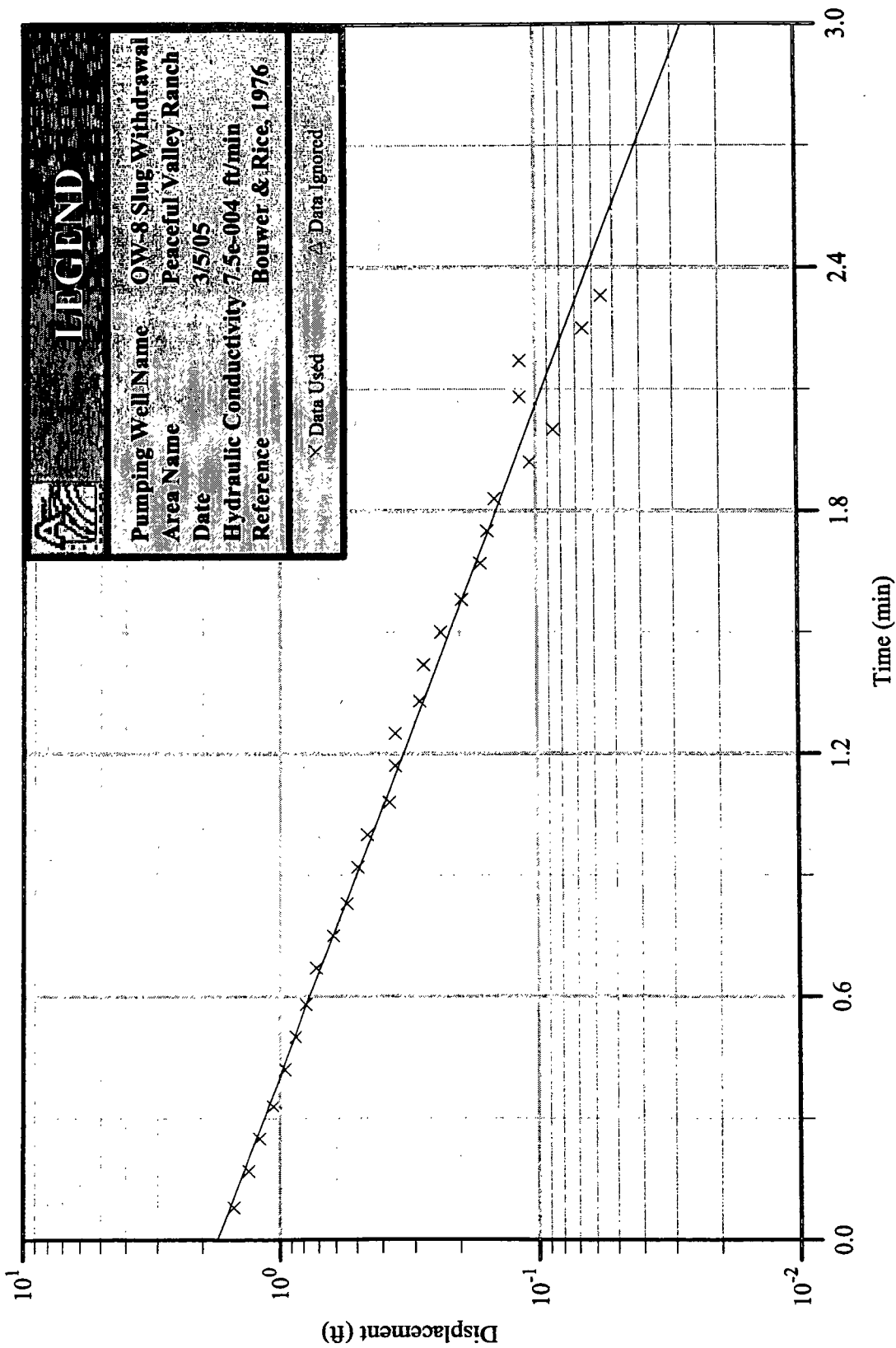












**Appendix C-4**  
**Well Logs**



# VINJE & MIDDLETON ENGINEERING, INC.

2450 Vineyard Avenue  
Escondido, California 92029-1229

Phone (760) 743-1214  
Fax (760) 739-0343

June 17, 2004

County of San Diego  
Department of Environmental Health  
Site Assessment and Mitigation Program  
Attention: Well Permitting Desk  
P.O. Box 129261  
San Diego, CA 92112-9261

**RE: WELL PERMIT #LMON102295**


The attached site plan and well logs for seven (7) observations wells were installed at Peaceful Valley Ranch in Jamul, California between June 15 - 16, 2004 under the above referenced permit. The purpose of which was to determine the depth to groundwater and the impacts, if any, of proposed leach field septic systems on groundwater for a planned residential development.

As such, no environmental sampling was conducted. Soil cuttings were not drummed and only minor water was encountered in one observation well (OW-7), therefore, no development water was generated in this work.

Site Location: Peaceful Valley Ranch Road, Jamul, CA  
Thomas Brothers Page: 1292-J3  
APN: 597-050-13; 597-060-02; 597-070-02; 597-070-07

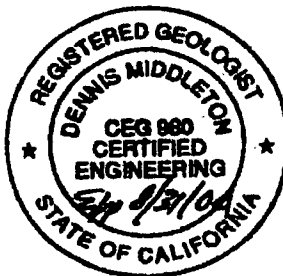
If you require additional information, please contact me at (760) 743-1214.

**VINJE & MIDDLETON ENGINEERING, INC.**

  
\_\_\_\_\_  
Brad Crawshaw  
Project Manager

JOB # 03-259-S		<b>WELL LOG</b>		WELL I.D. OW-7	
PROJECT NAME/LOCATION: PEACEFUL VALLEY RANCH / CAMPO RD., JAMUL, CA					
DATE DRILLED: 6/15/04		DRILLING CONTRACTOR: WEST HAZMAT			
		DRILL RIG: CME 85			
BORING DIAMETER: 8"		CASING MAT./DIA. PVC / 2"		SCREEN: TYPE SCH 40 MAT. PVC LENGTH 10' DIA. 2" SLOT SIZE 0.02"	
ELEVATION OF: (FT. ABOVE M.S.L.)		TOP OF CASING 858.42'	TOP & BTM OF SCREEN 827.42' & 817.42'	GROUNDWATER SURFACE 818.42'	DATE MEASURED 6/15/04

Depth (ft)	Sample No.	PID Reading (ppm)	Blows/6"	Unified Soil Classification	LOG OF TEST BORING		WELL DESIGN	Description
					DESCRIPTION	REMARKS		
2				SM	TOPSOIL: Red-brown silty fine sand.			Concrete Seal (3')
4				SM	Red-brown silty fine sand (D.G.)			
6								
8								
10								Bentonite Slurry Grout
12				SM	Grey silty medium-coarse sand (D.G.)			
14								
16								
18								
20								Bentonite Chips
22								
24								
26					Increase density @ 26'			
28								
30								Monterey #3 Sand
32								
34								
36								
38								
40						1st water @ 40'		
42					End Boring @ 42'	REFUSAL @ 42'		
44								
46								
48								
50								
52								
54								
56								
58								
60								



**Vinje & Middleton Engineering, Inc.**  
 2450 Vineyard Avenue  
 Suite 100  
 Escondido, Ca. 92029-1229  
 (760) 743-1214  
 Fax (619) 739-0343

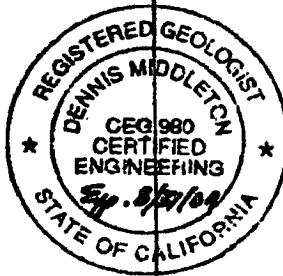
**LEGEND:**


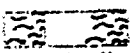

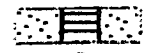


Bentonite Slurry = 60 gallons  
 Bentonite Chips = 2 bags  
 Monterey #3 Sand = 4.5 bags

JOB # 03-269-S		WELL LOG		WELL I.D. OW-1
PROJECT NAME/LOCATION: PEACEFUL VALLEY RANCH / CAMPO RD., JAMUL, CA				
DATE DRILLED: 6/15/04		DRILLING CONTRACTOR: WEST HAZMAT		
		DRILL RIG: CME 85		
BORING DIAMETER: 8"		CASING MAT./DIA. PVC / 2"		SCREEN: TYPE SCH 40 MAT. PVC LENGTH 10' DIA. 2" SLOT SIZE 0.02"
ELEVATION OF: (FT. ABOVE M.S.L.)		TOP OF CASING 918.90'	TOP & BTM OF SCREEN 889.90' & 879.90'	GROUNDWATER SURFACE Not Encountered
		DATE MEASURED 6/15/04		

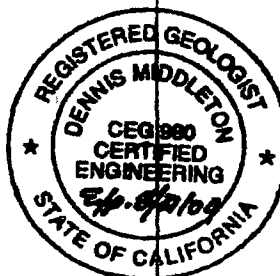
Depth (ft)	Sample No	pH Reading (ppm)	Blows/6"	Unified Soil Classification	LOG OF TEST BORING		Well Design	Description
					DESCRIPTION	REMARKS		
2				SM	TOPSOIL: Red-brown silty fine sand, dry			Concrete Seal (3')
4				SM	Lt. brown silty medium sand (D.G.)			Bentonite Slurry Grout
6								
8								
10								
12				SM	Gray silty fine sand (D.G.), dry, well sorted			Bentonite Chips
14								
16								
18								
20								
22								
24								
26								
28					Increase density @ 28'			
30								
32								
34								
36								
38								
40						No Water Encountered		Monterey #3 Sand
42					End Boring @ 40'			
44								
46								
48								
50								
52								
54								
56								
58								
60								



<b>Vinje &amp; Middleton Engineering, Inc.</b> 2450 Vineyard Avenue Suite 100 Escondido, Ca. 92029-1229 (760) 743-1214 Fax (619) 739-0343	<b>LEGEND:</b> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">             Concrete seal         </div> <div style="text-align: center;">             Bentonite Slurry Grout         </div> <div style="text-align: center;">             Bentonite Pellets         </div> <div style="text-align: center;">             0.02" Slot Well Screen         </div> </div>	<div style="display: flex; justify-content: space-between;"> <div>           Bentonite Slurry = 50 gallons            Bentonite Chips = 2 bags            Monterey #3 Sand = 4.5 bags         </div> </div>
--	---	---

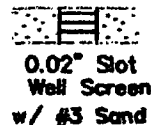
JOB # 03-269-S		<b>WELL LOG</b>		WELL I.D. OW-2	
PROJECT NAME/LOCATION: PEACEFUL VALLEY RANCH / CAMPO RD., JAMUL, CA					
DATE DRILLED: 6/16/04		DRILLING CONTRACTOR: WEST HAZMAT			
		DRILL RIG: CME 85			
BORING DIAMETER: 8"		CASING MAT./DIA. PVC / 2"		SCREEN: TYPE SCH 40 MAT. PVC LENGTH 10' DIA. 2" SLOT SIZED.02	
ELEVATION OF: (FT. ABOVE M.S.L.)		TOP OF CASING 899.88'	TOP & BTM OF SCREEN 879.88' & 869.88'	GROUNDWATER SURFACE Not Encountered	DATE MEASURED 6/16/04

Depth (ft)	Sample No.	PID Reading (ppm)	Blows/6"	Unified Soil Classification	LOG OF TEST BORING		WELL DESIGN	Description
					DESCRIPTION	REMARKS		
1				SM	TOPSOIL: Red-brown silty fine sand, dry			Concrete Seal (3')
2								
3								
4				SM	Grey - tan silty medium - coarse sand. Well graded, dry, weathered. (D.G.)			
5								
6								
7								
8								Bentonite Slurry Grout
9								
10								
11								
12								
13								
14								
15					Increase in mafic mineral content. Uniformly massive.			Bentonite Chips
16								
17								
18								
19								
20								
21								
22								
23								
24								
25					increased drill resistance @ 24.5'			Monterey #3 Sand
26								
27								
28								
29						No Water Encountered		
30					End Boring @ 30'			



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 Engineering, Inc.  
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 Fax (619) 739-0343

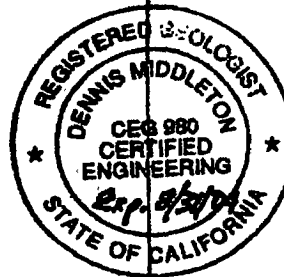
**LEGEND:**



Bentonite Slurry = 35 gallons  
 Bentonite Chips = 2 bags  
 Monterey #3 Sand = 4.5 bags

JOB # 03-269-S	<b>WELL LOG</b>		WELL I.D. OW-3
PROJECT NAME/LOCATION: PEACEFUL VALLEY RANCH / CAMPO RD., JAMUL, CA			
DATE DRILLED: 6/16/04	DRILLING CONTRACTOR: WEST HAZMAT		
	DRILL RIG: CME 85		
BORING DIAMETER: 8"	CASING MAT./DIA. PVC / 2"	SCREEN: TYPE SCH 40 MAT. PVC LENGTH 10' DIA. 2" SLOT SIZED.02	
ELEVATION OF: (FT. ABOVE M.S.L.)	TOP OF CASING 879.37'	TOP & BTM OF SCREEN 859.37' & 849.37'	GROUNDWATER SURFACE Not Encountered
			DATE MEASURED 6/16/04

Depth (ft)	Sample No	PID Reading (ppm)	Blows/6"	Unified Soil Classification	LOG OF TEST BORING		WELL DESIGN	Description
					DESCRIPTION	REMARKS		
1				SM/SC	TOPSOIL: Dark brown silty sand w/ trace clay			Concrete Seal (3')
2								
3								
4				SM	Dark brown silty medium grained sand			
5								
6								
7								
8								
9								Bentonite Slurry Grout
10				SM	Grey - brown silty medium grained sand (D.G.) Well graded, dry, weathered.			
11								
12								
13								
14								
15								Bentonite Chips
16								
17					Grades coarse grained @ 17'			
18								
19								
20								
21								
22					Increased drill resistance @ 22'			
23								
24								
25								Monterey #3 Sand
26								
27								
28								
29								
30								
					End Boring @ 31'	No Water Encountered		



<b>Vinje &amp; Middleton Engineering, Inc.</b> 2450 Vineyard Avenue Suite 100 Escondido, Ca. 92029-1229 (760) 743-1214 Fax (619) 739-0343	<b>LEGEND:</b> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">             Concrete seal         </div> <div style="text-align: center;">             Bentonite Slurry Grout         </div> <div style="text-align: center;">             Bentonite Pellets         </div> <div style="text-align: center;">             0.02" Slot Well Screen w/ #3 Sand         </div> </div>	<div style="display: flex; justify-content: space-between;"> <div>           Bentonite Slurry = 35 gallons            Bentonite Chips = 2 bags            Monterey #3 Sand = 4.5 bags         </div> </div>
--	--	---

JOB # 03-269-S	<b>WELL LOG</b>	WELL I.D. OW-4
PROJECT NAME/LOCATION: PEACEFUL VALLEY RANCH / CAMPO RD., JAMUL, CA		
DATE DRILLED: 6/15/04	DRILLING CONTRACTOR: WEST HAZMAT	
	DRILL RIG: CME 85	
BORING DIAMETER: 8"	CASING MAT./DIA. PVC / 2"	SCREEN: TYPE SCH 40 MAT. PVC LENGTH 10' DIA. 2" SLOT SIZED 0.02"
ELEVATION OF: (FT. ABOVE M.S.L.)	TOP OF CASING 952.14'	TOP & BTM OF SCREEN 933.14' & 923.14'
		GROUNDWATER SURFACE Not Encountered
		DATE MEASURED 6/15/04

Depth (ft)	Sample No	PO Reading (ppm)	Blows/6"	Unified Soil Classification	LOG OF TEST BORING		WELL DESIGN	Description
					DESCRIPTION	REMARKS		
1				SM	TOPSOIL: Red-brown silty fine sand, moist			Concrete Seal (3')
2								
3								
4				SM	Dark brown silty medium grained sand, moist			Bentonite Slurry Grout
5								
6								
7								
8								
9								
10								
11				SM/SC	Dark brown silty clayey sand			
12								
13								
14				SM	Grey silty medium-coarse grained sand (D.G.)			Bentonite Chips
15								
16								
17								
18								
19								
20								
21								
22					increased drill resistance @ 22'			
23								
24								
25								Monterey #3 Sand
26								
27								
28						No Water Encountered		
29								
30								
					End Boring @ 29' Contact w/ Impervious Bedrock	Drill Refusal		

<b>Vinje &amp; Middleton Engineering, Inc.</b> 2450 Vineyard Avenue Suite 100 Escondido, Ca. 92029-1229 (760) 743-1214 Fax (619) 739-0343	<b>LEGEND:</b> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">             Concrete seal         </div> <div style="text-align: center;">             Bentonite Slurry Grout         </div> <div style="text-align: center;">             Bentonite Pellets         </div> <div style="text-align: center;">             0.02" Slot Well Screen w/ #3 Sand         </div> </div>	<div style="display: flex; justify-content: space-between;"> <div>           Bentonite Slurry = 35 gallons            Bentonite Chips = 2 bags            Monterey #3 Sand = 4.5 bags         </div> </div>
--	--	---

JOB # 03-269-S	<b>WELL LOG</b>		WELL I.D. OW-5
PROJECT NAME/LOCATION: PEACEFUL VALLEY RANCH / CAMPO RD., JAMUL, CA			
DATE DRILLED: 6/15/04	DRILLING CONTRACTOR: WEST HAZMAT		
	DRILL RIG: CME 85		
BORING DIAMETER: 8"	CASING MAT./DIA. PVC / 2"	SCREEN: TYPE SCH 40 MAT. PVC LENGTH 10' DIA. 2" SLOT SIZE 0.02"	
ELEVATION OF: (FT. ABOVE M.S.L.)	TOP OF CASING 932.68'	TOP & BTM OF SCREEN 917.68' & 907.68'	GROUNDWATER SURFACE Not Encountered
			DATE MEASURED 6/15/04

Depth (ft)	Sample No	PID Reading (ppm)	Blows/6"	Unified Soil Classification	LOG OF TEST BORING		WELL DESIGN	Description
					DESCRIPTION	REMARKS		
1				SM/SC	TOPSOIL: Red-brown silty fine sand w/ trace clay.			Concrete Seal (3')
2								
3								
4								
5								Bentonite Slurry Grout
6				SM	Tan silty medium - coarse sand, weather dry (D.G.)			
7								
8								
9								
10								Bentonite Chips
11								
12								
13								
14					Grey silty coarse grained sand @ 14'			
15								
16								
17								
18								
19								
20								Monterey #3 Sand
21								
22								
23								
24								
25								
26						No Water Encountered		
27					End of Boring @ 26'	<u>Drill Refusal</u>		
28					Contact w/ Impervious Bedrock			
29								
30								

<b>Vinje &amp; Middleton Engineering, Inc.</b> 2450 Vineyard Avenue Suite 100 Escondido, Ca. 92029-1229 (760) 743-1214 Fax (619) 739-0343	<b>LEGEND:</b> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">             Concrete seal         </div> <div style="text-align: center;">             Bentonite Pallets         </div> <div style="text-align: center;">             Bentonite Slurry Grout         </div> <div style="text-align: center;">             0.02" Slot Well Screen w/ #3 Sand         </div> </div>	<div style="display: flex; justify-content: space-between;"> <div>           Bentonite Slurry = 25 gallons            Bentonite Chips = 2 bags            Monterey #3 Sand = 4.5 bags         </div> </div>
--	--	---

JOB # 03-269-S		WELL LOG		WELL I.D. OW-6	
PROJECT NAME/LOCATION: PEACEFUL VALLEY RANCH / CAMPO RD., JAMUL, CA					
DATE DRILLED: 6/15/04		DRILLING CONTRACTOR: WEST HAZMAT			
		DRILL RIG: CME 85			
BORING DIAMETER: 8"		CASING MAT./DIA. PVC / 2"		SCREEN: TYPE 90H 40 MAT. PVC LENGTH 10' DIA. 2" SLOT SIZE 0.02"	
ELEVATION OF: (FT. ABOVE M.S.L.)		TOP OF CASING 857.75'	TOP & BTM OF SCREEN 837.75' & 827.75'	GROUNDWATER SURFACE Not Encountered	DATE MEASURED 6/15/04

Depth (ft)	Sample No.	pH Reading (ppm)	Blows/6"	Unified Soil Classification	LOG OF TEST BORING		WELL DESIGN	Description	
					DESCRIPTION	REMARKS			
1				SM	TOPSOIL: Red-brown silty fine - coarse sand, dry, poorly sorted.			Concrete Seal (3')	
2									
3									
4									
5									
6									
7				SM	Lt. brown silty fine sand, dry well sorted.				Bentonite Slurry Grout
8									
9									
10									
11									
12				SM	Grey silty medium - coarse sand (D.G.)				
13									
14									
15									Bentonite Chips
16									
17									
18					Increased drill resistance @ 18'				
19									
20									
21									
22									
23									
24									
25									Monterey #3 Sand
26									
27					hard drilling 27' - 30'				
28						No Water Encountered			
29									
30					End Boring @ 30'	REFUSAL @ 30'			

**Vinje & Middleton Engineering, Inc.**  
2450 Vineyard Avenue  
Suite 100  
Escondido, Ca. 92029-1229  
(760) 743-1214  
Fax (619) 739-0343

**LEGEND:**

Concrete seal

Bentonite Slurry Grout

Bentonite Pellets

0.02" Slot Well Screen w/ #3 Sand

Bentonite Slurry = 30 gallons

Bentonite Chips = 2 bags

Monterey #3 Sand = 4.5 bags



PERMIT #LMON102636  
A.P.N. #597-070-07, 02  
EST # NONE

**COUNTY OF SAN DIEGO  
DEPARTMENT OF ENVIRONMENTAL HEALTH  
LAND AND WATER QUALITY DIVISION**

**MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT**

**SITE NAME: PEACEFUL VALLEY RANCH**

**SITE ADDRESS: 14000 PEACEFUL VALLEY RANCH RD, JAMUL, CA**

**PERMIT FOR: INSTALL 2 GROUNDWATER MONITORING WELLS**

**PERMIT APPROVAL DATE: 10/25/04**

**PERMIT EXPIRES ON: 02/22/05**

**RESPONSIBLE PARTY: PVR, LLC**

**PERMIT CONDITIONS:**

1. Wells must have a minimum 3-foot concrete surface seal. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.
2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. ([http://www.sdcountry.ca.gov/deh/lwq/sam/manual\\_guidelines.html](http://www.sdcountry.ca.gov/deh/lwq/sam/manual_guidelines.html)). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

**NOTE:** This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.

APPROVED BY: Carol Spangenberg  
CAROL SPANGENBERG

DATE: 10/25/04

NOTIFIED: Carol 10/25/04

DEH:SAM-9075 (3/04)

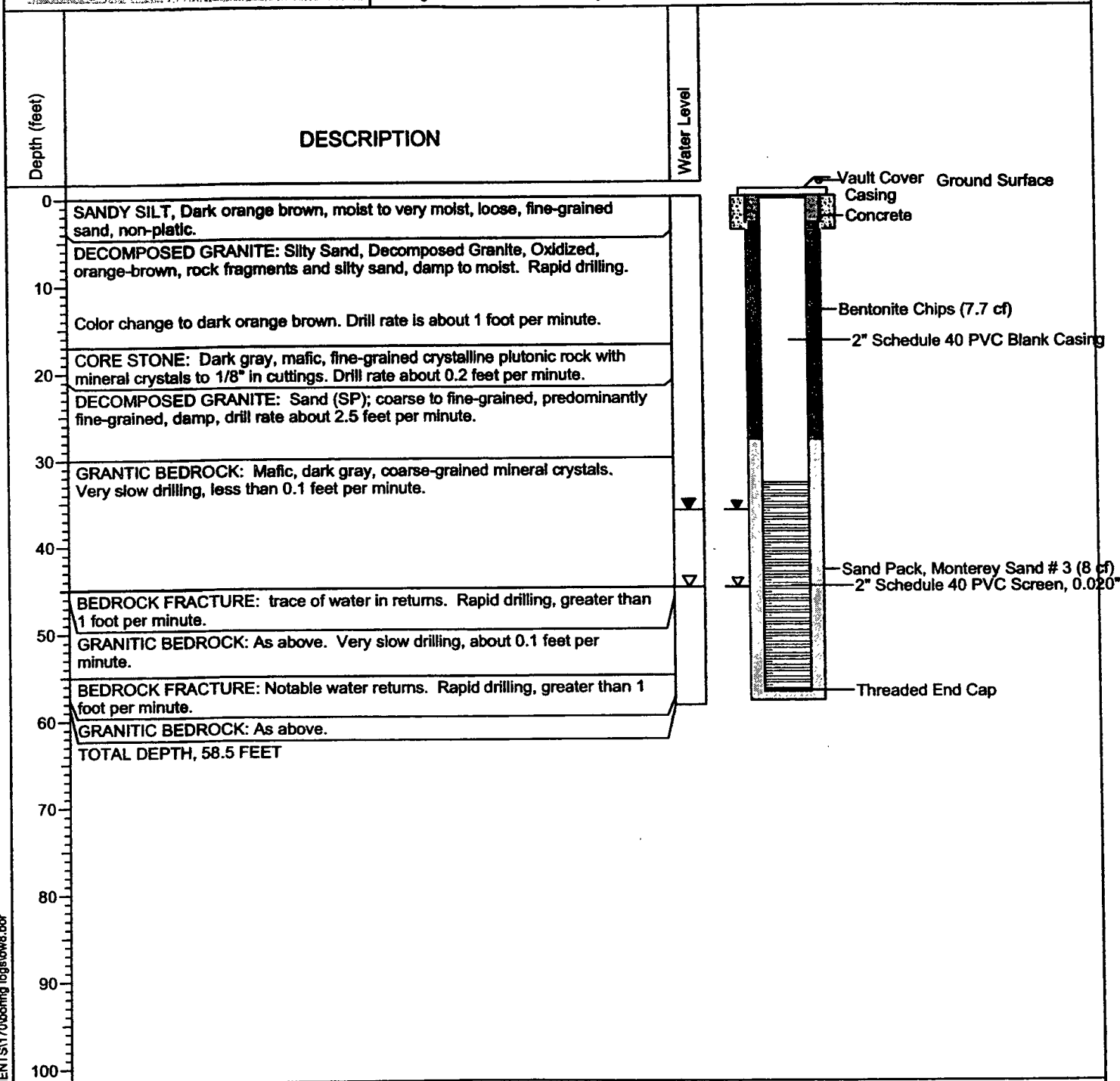
Post-It® Fax Note 7671		Date	# of pages
To	M. Wiedner	From	V. Tany
Co./Dept.		Co.	
Phone #	858	Phone #	
Fax #	254-1041	Fax #	



# Geologic Log & Well Construction Information For OW-8

Well No. : OW-8  
 Drilling Contractor : Tri-County Drilling  
 Date Started : 10/26/04  
 Date Completed : 10/26/04  
 Drilling Method : Air Rotary

Borehole Diameter : 7-1/2"  
 Ground Elevation : 861.15 ft, msl  
 Top of Casing Elev. : 861.15 ft, msl  
 Total Depth : 57.5  
 Static Water Level : 36.1 TOC 10/28/04



P.O. Box 910462  
 San Diego, CA 92191-0462  
 Ph 858 259-6732  
 Fx 858 259-6094

Prepared For:  
 Peaceful Valley Ranch, LLC  
 1801 East 9th Street, Suite 1300  
 Cleveland, OH 44114



# Geologic Log & Well Construction Information For OW-9

Well No. : OW-9  
 Drilling Contractor : Tri-County Drilling  
 Date Started : 10/29/04  
 Date Completed : 11/1/04  
 Drilling Method : Air Rotary

Borehole Diameter : 7-1/2"  
 Ground Elevation : 877.74 ft, msl  
 Top of Casing Elev. : 877.74 ft, msl  
 Total Depth : 82.0  
 Static Water Level : 49 ft, bgs

Depth (feet)

## DESCRIPTION

Water Level

0 SANDY SILT, Dark orange brown, moist to wet, loose, fine-grained sand, non-platic.

10 DECOMPOSED GRANITE: Silty Sand, Decomposed Granite, Oxidized, orange-brown, rock fragments and silty sand, damp to moist. Rapid drilling. Color change to dark orange brown. Drill rate is about 1 foot per minute. Light gray color.

20 Drilling rate increases to about 3 feet per minute. Drilling rate returns to about 1 foot per minute.

30 Drilling rate increases to about 3 feet per minute. Drilling rate returns to about 1 foot per minute.

40

50 DECOMPOSED GRANITE: Brown-medium gray. Increased drill rate, about 1 foot per minute. GRANITIC BEDROCK: As above. Very slow drilling, about 0.1 feet per minute.

60 GRANITIC BEDROCK : Medium to light gray. Coarse and fine grained mineral crystals. Dry. Decreased drilling rate, less than 0.5 foot per minute.

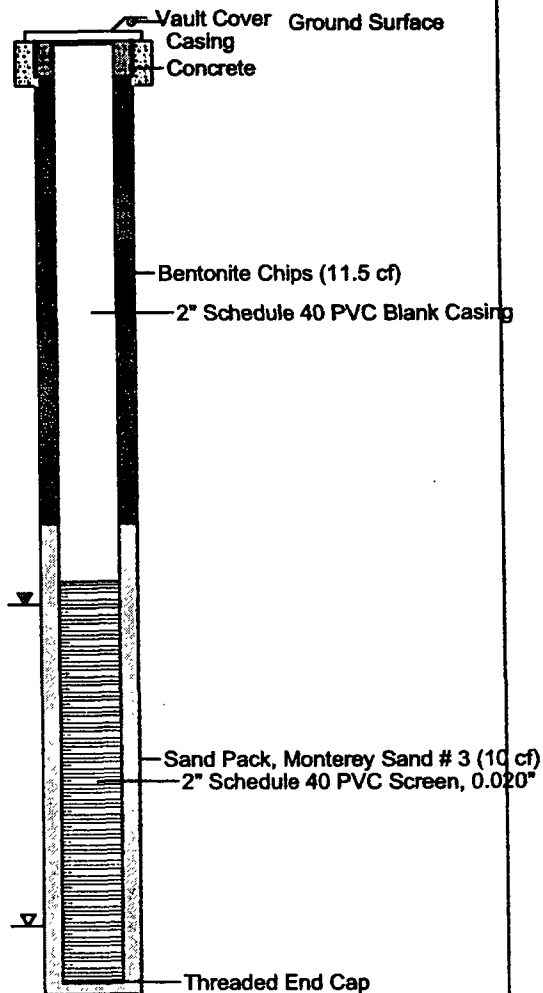
70

80

90

100

TOTAL DEPTH 83.0 FEET



P.O. Box 910462  
 San Diego, CA 92191-0462  
 Ph 858 259-6732  
 Fx 858 259-6094

Prepared For:  
 Peaceful Valley Ranch, LLC  
 1801 East 9th Street, Suite 1300  
 Cleveland, OH 44114

# GDI

• WATER WELL VIDEO INSPECTION  
• GEOPHYSICAL LOGGING

GROUNDWATER DATA, INC.  
23945 Old Wagon Road  
Escondido, CA 92027

1-800-351-0508

## GROUNDWATER DATA, Inc

23945 Old Wagon Rd. - Escondido, Ca. 92027

1 (800) 351-0508

Fax # 761-1560

GDI Log # 04-09008 Date: 9-24-01

Client: PVR LLC

Site: PEACEFUL VALLEY DAM #1

WELL #: PV #4 Depth: <150' PER VERM>

Casing Diameter / Type: 7" OD TO 24.9'

Static Water Level: 29' W/2' OF TURBINE OIL

Perforation Type: - (CLOUDY VISIBILITY TO

Location of perfs: - APPROX 60' )

39.7' - MEDIUM HORIZONTAL FRACTURE

- SERIES OF SMALL HORIZONTAL  
FRAC'S

63.7' - 64.7' BROKEN AREA

Notes: 68.5' - 70.5' LARGE, ROUND AREA

72.5' - 88.4' ROUNDER BORE HOLE

97.0' - VISIBILITY IS CLEARING UP

105.8' SS FRACTURE AREA WITH DEEP HOLES

106.5' SS SAME

112.7' SS SERIES OF HORIZONTAL FRACTURES

122.1' SS SEAM & START OF TIGHTER FORMATION

—— 9:01 O'CLOCK IS A MARK FROM THE  
PUMP COLUMN & BOWLS BEING UP  
AGAINST THE BORE HOLE WALL

134.5' DH CAMERA HAS STOPPED DESCENDING  
& THE LIGHT IS TOUCHING DEBRIS  
& OIL EMULSION AT THE BOTTOM.

136.5' — PRESENT DEPTH \*

< 150' ORIGINAL DEPTH PER VERBAL INFO >

\* NOTE: PUMP STRAINER CONE WAS PROBABLY  
IN THE DEBRIS AT THE BOTTOM.

**APPENDIX D**

**LABORATORY REPORTS  
PEACEFUL VALLEY RANCH**

**EnviroMatrix**



**Analytical, Inc.**


19 March 2004

Wiedlin & Associates  
Attn: Matt Wiedlin  
4325 Corte de Sausalito  
San Diego, CA 92130

EMA Log #: 0402364

**Project Name: No Project**

Enclosed are the results of analyses for samples received by the laboratory on 02/27/04 15:45. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

  
Dan Verdon  
Laboratory Director

CA ELAP Certification #: 1931

Client Name: Wiedlin & Associates  
Project Name: No Project

EMA Log #: 0402364

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D	0402364-01	Water	02/27/04 13:45	02/27/04 15:45
E	0402364-02	Water	02/27/04 15:00	02/27/04 15:45

\*Note: Due to laboratory scheduling constraints the nitrite analyses were performed one day outside of the method recommended holding time. Samples were stored at 4 degrees celsius prior to analysis. It is not suspected that results for nitrite would be impacted by the extended holding time. Nitrite analysis is a method requirement for analyzing nitrate in waters. The nitrite contribution is subtracted during the determination of nitrate.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Client Name: Wiedlin & Associates  
Project Name: No Project

EMA Log #: 0402364

### Conventional Chemistry Parameters by Standard/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>D (0402364-01) Water</b> <b>Sampled: 02/27/04 13:45</b> <b>Received: 02/27/04 15:45</b>									
Nitrate as N	1.72	0.20	mg/l	4	4031910	03/19/04	03/19/04	SM4500 NO3 E	W-02
pH	7.14	0.10	pH Units	1	4030102	02/27/04	02/27/04	EPA 150.1	
Total Dissolved Solids	373	20	mg/l	"	4031116	03/03/04	03/03/04	SM2540 C	
<b>E (0402364-02) Water</b> <b>Sampled: 02/27/04 15:00</b> <b>Received: 02/27/04 15:45</b>									
Nitrate as N	3.92	0.25	mg/l	5	4031910	03/19/04	03/19/04	SM4500 NO3 E	W-02
pH	6.94	0.10	pH Units	1	4030102	02/27/04	02/27/04	EPA 150.1	
Total Dissolved Solids	367	20	mg/l	"	4031116	03/03/04	03/03/04	SM2540 C	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Client Name: Wiedlin & Associates  
Project Name: No Project

EMA Log #: 0402364

**Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4030102</b>										
<b>Duplicate (4030102-DUP1)</b>		<b>Source: 0402353-01</b>		<b>Prepared &amp; Analyzed: 02/27/04</b>						
pH	7.58	0.10	pH Units		7.62			0.5	20	
<b>Reference (4030102-SRM1)</b>		<b>Prepared &amp; Analyzed: 02/27/04</b>								
pH	8.89	0.10	pH Units	9.10		98	97-103			
<b>Batch 4031116</b>										
<b>Duplicate (4031116-DUP1)</b>		<b>Source: 0402340-01</b>		<b>Prepared &amp; Analyzed: 03/03/04</b>						
Total Dissolved Solids	424	20	mg/l		498			16	20	
<b>Reference (4031116-SRM1)</b>		<b>Prepared &amp; Analyzed: 03/03/04</b>								
Total Dissolved Solids	261	20	mg/l	276		95	87-113			
<b>Batch 4031910</b>										
<b>Blank (4031910-BLK1)</b>		<b>Prepared &amp; Analyzed: 03/19/04</b>								
Nitrate as N	ND	0.05	mg/l							
<b>LCS (4031910-BS1)</b>		<b>Prepared &amp; Analyzed: 03/19/04</b>								
Nitrate as N	0.40	0.05	mg/l	0.500		80	80-120			
<b>LCS Dup (4031910-BSD1)</b>		<b>Prepared &amp; Analyzed: 03/19/04</b>								
Nitrate as N	0.41	0.05	mg/l	0.500		82	80-120	2	20	
<b>Duplicate (4031910-DUP1)</b>		<b>Source: 0403210-01</b>		<b>Prepared &amp; Analyzed: 03/19/04</b>						
Nitrate as N	3.44	0.25	mg/l		3.44			0	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Wiedlin & Associates  
Project Name: No Project

EMA Log #: 0402364

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4031910</b>										
<b>Matrix Spike (4031910-MS1)</b>		<b>Source: 0403210-01</b>		<b>Prepared &amp; Analyzed: 03/19/04</b>						
Nitrate as N	5.11	0.50	mg/l	5.00	3.44	33	80-120			QM-4X
<b>Matrix Spike Dup (4031910-MSD1)</b>		<b>Source: 0403210-01</b>		<b>Prepared &amp; Analyzed: 03/19/04</b>						
Nitrate as N	5.30	0.50	mg/l	5.00	3.44	37	80-120	4	20	QM-4X

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Client Name: Wiedlin & Associates  
Project Name: No Project

EMA Log #: 0402364

### Notes and Definitions

- QM-4X The spike recovery was outside of the QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- W-02 The sample for nitrate analysis was preserved with H<sub>2</sub>SO<sub>4</sub> after the nitrite portion of the analysis was completed to extend the holding time for the sample. Nitrate results are corrected for the nitrite contribution per the method.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



# CHAIN-OF-CUSTODY RECORD

EnviroMatrix Analytical, Inc.

4340 Viewridge Ave., Ste. A • San Diego, CA 92123 • Phone (858) 560-7717 • Fax (858) 560-7763

EMA LOG #: 2010022407

## EMA DATE/TIME STAMP

### REQUESTED ANALYSIS

Client: 4340 Viewridge Ave., Ste. A, San Diego, CA 92123

Address: 4340 Viewridge Ave., Ste. A, San Diego, CA 92123

Attn: Mr. [Name] Phone: 858-560-7717

Sampled by: [Signature] Fax: 858-560-7763

Billing Address: [Blank]

PO #:

EMA ID #	Client Sample ID	Sample Date	Sample Time	Sample Matrix	Container(s) # Type*
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

\*Container Types: B=Brass Tube; V=VOA; G=Glass; P=Plastic; JO=Other (list)

Turner-Proof Seals Intact: Yes No N/A Correct Containers: Yes No N/A

Sample(s): Cold Ambient Warm VOAs w/ZHS: Yes No N/A

All Samples Properly Preserved: Yes No N/A

Disposal: N/C (aqueous) \*EMA @\$5.00/sample Return Hold

Turnaround Time: 24 hr 48 hr 3 day 4 day 5 day (Normal)

Comments:

### RELINQUISHED BY

Signature: [Signature]

Print: [Name]

Company: [Company]

Signature: [Signature]

Print: [Name]

Company: [Company]

Signature: [Signature]

Print: [Name]

Company: [Company]

### DATE/TIME

4/27/07 3:45

### RECEIVED BY

Signature: [Signature]

Print: [Name]

Company: [Company]

Signature: [Signature]

Print: [Name]

Company: [Company]

Signature: [Signature]

Print: [Name]

Company: [Company]

\*EMA reserves the right to return samples that do not match our waste profile.

Goldenrod - Client (Relinquish Samples)

**EnviroMatrix**



**Analytical, Inc.**

29 June 2004

Wiedlin & Associates  
Attn: Matt Wiedlin  
4325 Corte de Sausalito  
San Diego, CA 92130

**EMA Log #: 0406245**

**Project Name: Peaceful Valley 170**

Enclosed are the results of analyses for samples received by the laboratory on 06/21/04 15:15. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.


for: **Dan Verdon**  
**Laboratory Director**

CA ELAP Certification #: 1931

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406245

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PV-2 Well 1	0406245-01	Water	06/21/04 09:00	06/21/04 15:15
"J"	0406245-02	Water	06/21/04 11:25	06/21/04 15:15
OW-7	0406245-03	Water	06/21/04 13:00	06/21/04 15:15
Turbine Well (PV-4) 	0406245-04	Water	06/21/04 14:22	06/21/04 15:15

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406245

### Conventional Chemistry Parameters by Standard/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>PV-2 Well 1 (0406245-01) Water</b> Sampled: 06/21/04 09:00 Received: 06/21/04 15:15									
Nitrate as N	8.36	0.50	mg/l	10	4062804	06/25/04	06/25/04	SM4500 NO3 E	W-02
Total Dissolved Solids	1140	20	"	1	4062513	06/26/04	06/28/04	SM2540 C	
<b>"J" (0406245-02) Water</b> Sampled: 06/21/04 11:25 Received: 06/21/04 15:15									
Nitrate as N	0.57	0.50	mg/l	10	4062804	06/25/04	06/25/04	SM4500 NO3 E	W-02
Total Dissolved Solids	1520	20	"	1	4062513	06/26/04	06/28/04	SM2540 C	
<b>OW-7 (0406245-03) Water</b> Sampled: 06/21/04 13:00 Received: 06/21/04 15:15									
Nitrate as N	9.47	0.50	mg/l	10	4062804	06/25/04	06/25/04	SM4500 NO3 E	W-02
Total Dissolved Solids	912	20	"	1	4062513	06/26/04	06/28/04	SM2540 C	
<b>PV-4 (0406245-04) Water</b> Sampled: 06/21/04 14:22 Received: 06/21/04 15:15									
Nitrate as N	13.0	1.00	mg/l	20	4062804	06/25/04	06/25/04	SM4500 NO3 E	W-02
Total Dissolved Solids	1000	20	"	1	4062513	06/26/04	06/28/04	SM2540 C	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406245

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4062513</b>										
<b>Blank (4062513-BLK1)</b>				Prepared: 06/26/04 Analyzed: 06/28/04						
Total Dissolved Solids	ND	20	mg/l							
<b>Duplicate (4062513-DUP1)</b>				Source: 0406269-01	Prepared: 06/26/04 Analyzed: 06/28/04					
Total Dissolved Solids	643	20	mg/l		602			7	20	
<b>Reference (4062513-SRM1)</b>				Prepared: 06/26/04 Analyzed: 06/28/04						
Total Dissolved Solids	260	20	mg/l	284		92	90-110			
<b>Batch 4062804</b>										
<b>Blank (4062804-BLK1)</b>				Prepared & Analyzed: 06/25/04						
Nitrate as N	ND	0.05	mg/l							
<b>LCS (4062804-BS1)</b>				Prepared & Analyzed: 06/25/04						
Nitrate as N	0.49	0.05	mg/l	0.500		98	80-120			
<b>LCS Dup (4062804-BSD1)</b>				Prepared & Analyzed: 06/25/04						
Nitrate as N	0.50	0.05	mg/l	0.500		100	80-120	2	20	
<b>Duplicate (4062804-DUP1)</b>				Source: 0406251-01	Prepared & Analyzed: 06/25/04					
Nitrate as N	11.0	1.25	mg/l		13.2			18	20	
<b>Matrix Spike (4062804-MS1)</b>				Source: 0406245-02	Prepared & Analyzed: 06/25/04					
Nitrate as N	1.60	0.10	mg/l	1.00	0.57	103	80-120			
<b>Matrix Spike Dup (4062804-MSD1)</b>				Source: 0406245-02	Prepared & Analyzed: 06/25/04					
Nitrate as N	1.60	0.10	mg/l	1.00	0.57	103	80-120	0	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406245

**Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4062804**

**Reference (4062804-SRM1)**

**Prepared & Analyzed: 06/25/04**

Nitrate as N	7.13	0.50	mg/l	7.75	92	86-109
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*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406245

### Notes and Definitions

W-02 The sample for nitrate analysis was preserved with H<sub>2</sub>SO<sub>4</sub> after the nitrite portion of the analysis was completed to extend the holding time for the sample. Nitrate results are corrected for the nitrite contribution per the method.

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

**Analytical, Inc.**

127

4340 Viewridge Ave., Ste. A • San Diego, CA 92123 • Phone (858) 560-7717 • Fax (858) 560-7763

**EMA LOG #:****EMA DATE/TIME STAMP**

## REQUESTED ANALYSIS

[illegible]

**\*EMA reserves the right to return samples that do not match our waste profile.**

**White - EMA**

## Canary - Accounting

**Pink - Client (w/Report)**

**Goldenrod - Client (Relinquish Samples)**

**EnviroMatrix**



**Analytical, Inc.**

29 June 2004

Wiedlin & Associates  
Attn: Matt Wiedlin  
4325 Corte de Sausalito  
San Diego, CA 92130

EMA Log #: 0406251

**Project Name: Peaceful Valley 170**

Enclosed are the results of analyses for samples received by the laboratory on 06/22/04 14:30. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.


  
Dan Verdon  
Laboratory Director

CA ELAP Certification #: 1931

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406251

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PV-1 	0406251-01	Water	06/22/04 13:35	06/22/04 14:30

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406251

### Conventional Chemistry Parameters by Standard/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PV-8 (0406251-01) Water Sampled: 06/22/04 13:35 Received: 06/22/04 14:30									
Nitrate as N	13.2	1.25	mg/l	25	4062804	06/25/04	06/25/04	SM4500 NO3 E	W-02
Total Dissolved Solids	1120	20	"	1	4062513	06/26/04	06/28/04	SM2540 C	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406251

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4062513</b>										
<b>Blank (4062513-BLK1)</b>				Prepared: 06/26/04 Analyzed: 06/28/04						
Total Dissolved Solids	ND	20	mg/l							
<b>Duplicate (4062513-DUP1)</b>				Source: 0406269-01 Prepared: 06/26/04 Analyzed: 06/28/04						
Total Dissolved Solids	643	20	mg/l		602			7	20	
<b>Reference (4062513-SRM1)</b>				Prepared: 06/26/04 Analyzed: 06/28/04						
Total Dissolved Solids	260	20	mg/l	284		92	90-110			
<b>Batch 4062804</b>										
<b>Blank (4062804-BLK1)</b>				Prepared & Analyzed: 06/25/04						
Nitrate as N	ND	0.05	mg/l							
<b>LCS (4062804-BS1)</b>				Prepared & Analyzed: 06/25/04						
Nitrate as N	0.49	0.05	mg/l	0.500		98	80-120			
<b>LCS Dup (4062804-BSD1)</b>				Prepared & Analyzed: 06/25/04						
Nitrate as N	0.50	0.05	mg/l	0.500		100	80-120	2	20	
<b>Duplicate (4062804-DUP1)</b>				Source: 0406251-01 Prepared & Analyzed: 06/25/04						
Nitrate as N	11.0	1.25	mg/l		13.2			18	20	
<b>Matrix Spike (4062804-MS1)</b>				Source: 0406245-02 Prepared & Analyzed: 06/25/04						
Nitrate as N	1.60	0.10	mg/l	1.00	0.57	103	80-120			
<b>Matrix Spike Dup (4062804-MSD1)</b>				Source: 0406245-02 Prepared & Analyzed: 06/25/04						
Nitrate as N	1.60	0.10	mg/l	1.00	0.57	103	80-120	0	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406251

**Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4062804**

**Reference (4062804-SRM1)**

**Prepared & Analyzed: 06/25/04**

Nitrate as N	7.13	0.50	mg/l	7.75	92	86-109
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*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley 170

EMA Log #: 0406251

### Notes and Definitions

W-02     The sample for nitrate analysis was preserved with H<sub>2</sub>SO<sub>4</sub> after the nitrite portion of the analysis was completed to extend the holding time for the sample. Nitrate results are corrected for the nitrite contribution per the method.

ND        Analyte NOT DETECTED at or above the reporting limit

NR        Not Reported

dry        Sample results reported on a dry weight basis

RPD       Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



# CHAIN-OF-CUSTODY RECORD



EnviroMatrix Analytical, Inc.

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EMA LOG #: 04C0251

EMA DATE/TIME STAMP

Client: <b>WIEDIN ASSOC</b>				REQUESTED ANALYSIS																				
Address: <b>4355 La Jolla Village Dr</b>				STL Metals (CAC Title 22) TCLP (RCRA) Metals Organics pH EC TSS (TDS) Cd Cr Cu Pb Ni Ag Zn																				
Attn: <b>PAUL J. WIEDIN</b>				624 / 8260 (Volatile Organics) 608 / 8082 (PCBs) 608 / 8081 (Pesticides) 601 / 8021 (Purgeable Halocarbons) 602 / 8021 BTXE MTBE TPH-Extended 8015B ASTM D2887 TPH (8015B) Gas Diesel Oil & Grease 413.1 413.2 1664 418.1 (TRPH)																				
Sampled by: <b>PAUL J. WIEDIN</b>				Container(s) # Type* Sample Matrix Sample Time Sample Date Client Sample ID PO #																				
Billing Address:																								
Project: <b>Pearl Harbor</b>																								
EMA ID #	1	2	3	4	5	6	7	8	9	10														
*Container Types: B=Brass Tube; V=VOA; G=Glass; P=Plastic; O=Other (list) Tamper-Proof Seals Intact: Yes No Correct Containers: Yes No Sample(s): Cold Ambient Warm VOAs w/ZHS: Yes No (N/A) All Samples Properly Preserved: Yes No (N/A) Disposal: N/C (aqueous) *EMA (@\$5.00/sample) Return Hold Turnaround Time: 24 hr 48 hr 3 day 4 day 5 day Normal Comments:													RECEIVED BY Signature: <b>[Signature]</b> Print: <b>[Print]</b> Company: <b>[Company]</b> Signature: <b>[Signature]</b> Print: <b>[Print]</b> Company: <b>[Company]</b> Signature: <b>[Signature]</b> Print: <b>[Print]</b> Company: <b>[Company]</b>											
DATE/TIME <b>6-22-04</b> <b>2:30</b>													RELINQUISHED BY Signature: <b>[Signature]</b> Print: <b>[Print]</b> Company: <b>[Company]</b> Signature: <b>[Signature]</b> Print: <b>[Print]</b> Company: <b>[Company]</b>											
Pink - Client (w/Report) Canary - Accounting White - EMA													Goldenrod - Client (Relinquish Samples)											

\*EMA reserves the right to return samples that do not match our waste profile.

**EnviroMatrix**



**Analytical, Inc.**

02 July 2004

Wiedlin & Associates  
Attn: Matt Wiedlin  
4325 Corte de Sausalito  
San Diego, CA 92130

**EMA Log #: 0407006**

**Project Name: 170**

Enclosed are the results of analyses for samples received by the laboratory on 07/01/04 14:40. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

A handwritten signature in black ink, appearing to read 'Dan Verdon', is written over a horizontal line.

**Dan Verdon**  
**Laboratory Director**

**CA ELAP Certification #: 1931**

Client Name: Wiedlin & Associates  
Project Name: 170

EMA Log #: 0407006

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PVR Hand Dug (PV-2) <u>WOW</u>	0407006-01	Grnd-Water	07/01/04 13:15	07/01/04 14:40

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Client Name: Wiedlin & Associates  
Project Name: 170

EMA Log #: 0407006

**Conventional Chemistry Parameters by Standard/EPA Methods**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PVR Hand Dug (0407006-01) Grnd-Water Sampled: 07/01/04 13:15 Received: 07/01/04 14:40									
Nitrate as N	24.2	1.00	mg/l	20	4070211	07/02/04	07/02/04	SM4500 NO3 E	
pH	6.75	0.10	pH Units	1	4070204	07/01/04	07/01/04	EPA 150.1	
Total Dissolved Solids	1440	20	mg/l	"	4070127	07/01/04	07/02/04	SM2540 C	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Client Name: Wiedlin & Associates  
Project Name: 170

EMA Log #: 0407006

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4070127</b>										
<b>Duplicate (4070127-DUP1)</b>		<b>Source: 0406336-01</b>		<b>Prepared: 07/01/04 Analyzed: 07/02/04</b>						
Total Dissolved Solids	1730	20	mg/l		1760			2	20	
<b>Reference (4070127-SRM1)</b>		<b>Prepared: 07/01/04 Analyzed: 07/02/04</b>								
Total Dissolved Solids	290	20	mg/l	284		102	90-110			
<b>Batch 4070204</b>										
<b>Duplicate (4070204-DUP1)</b>		<b>Source: 0407002-02</b>		<b>Prepared &amp; Analyzed: 07/01/04</b>						
pH	7.95	0.10	pH Units		7.95			0	20	
<b>Reference (4070204-SRM1)</b>		<b>Prepared &amp; Analyzed: 07/01/04</b>								
pH	8.84	0.10	pH Units	9.10		97	97-103			
<b>Batch 4070211</b>										
<b>Blank (4070211-BLK1)</b>		<b>Prepared &amp; Analyzed: 07/02/04</b>								
Nitrate as N	ND	0.05	mg/l							
<b>LCS (4070211-BS1)</b>		<b>Prepared &amp; Analyzed: 07/02/04</b>								
Nitrate as N	0.49	0.05	mg/l	0.500		98	80-120			
<b>LCS Dup (4070211-BSD1)</b>		<b>Prepared &amp; Analyzed: 07/02/04</b>								
Nitrate as N	0.41	0.05	mg/l	0.500		82	80-120	18	20	
<b>Duplicate (4070211-DUP1)</b>		<b>Source: 0407004-02</b>		<b>Prepared &amp; Analyzed: 07/02/04</b>						
Nitrate as N	ND	0.05	mg/l		ND				20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Wiedlin & Associates  
Project Name: 170

EMA Log #: 0407006

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4070211</b>										
<b>Matrix Spike (4070211-MS1)</b>										
				Source: 0407004-02		Prepared & Analyzed: 07/02/04				
Nitrate as N	0.48	0.05	mg/l	0.500	ND	96	80-120			
<b>Matrix Spike Dup (4070211-MSD1)</b>										
				Source: 0407004-02		Prepared & Analyzed: 07/02/04				
Nitrate as N	0.46	0.05	mg/l	0.500	ND	92	80-120	4	20	
<b>Reference (4070211-SRM1)</b>										
				Prepared & Analyzed: 07/02/04						
Nitrate as N	14.9	1.00	mg/l	7.75		192	0-200			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Client Name: Wiedlin & Associates  
Project Name: No Project

EMA Log #: 0402364

### Notes and Definitions

- QM-4X The spike recovery was outside of the QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- W-02 The sample for nitrate analysis was preserved with H<sub>2</sub>SO<sub>4</sub> after the nitrite portion of the analysis was completed to extend the holding time for the sample. Nitrate results are corrected for the nitrite contribution per the method.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



# CHAIN-OF-CUSTODY RECORD



1'04 14.70

EnviroMatrix Analytical, Inc.

4340 Viewridge Ave., Ste. A • San Diego, CA 92123 • Phone (858) 560-7717 • Fax (858) 560-7763

## EMA DATE/TIME STAMP

EMA LOG #: 04107006

REQUESTED ANALYSIS									
Client:	Address:	Attn:	Phone:	Fax:	Billing Address:	Project:	PO #:	Client Sample ID	Container(s) # Type*
<div> <div> <div>Oil &amp; Grease 413.1 413.2 1664</div> <div>TPH (8015B) Gas Diesel</div> <div>TPH-Extended 8015B ASTM D2887</div> <div>602 / 8021 BTXE MTBE</div> <div>601 / 8021 (Purgeable Halocarbons)</div> <div>608 / 8081 (Pesticides)</div> <div>608 / 8082 (PCBs)</div> <div>624 / 8260 (Volatile Organics)</div> <div>625 / 8270 (Semi Volatile Organics)</div> <div>TL/C Metals (CAC Title 22)</div> <div>STLC Metals (CAC Title 22)</div> <div>TLCP (RCRA) Metals Organics</div> <div>Cd Cr Cu Pb Ni Ag Zn</div> <div>PH EC TSS TDS</div> </div> <div> <div>418.1 (TRPH)</div> <div>413.1 413.2 1664</div> <div>Gas Diesel</div> <div>ASTM D2887</div> <div>MTBE</div> <div>8021 BTXE</div> <div>8015B</div> <div>Extended</div> <div>TPH</div> <div>8021</div> <div>601 /</div> <div>8021</div> <div>(Purgeable Halocarbons)</div> <div>608 /</div> <div>8081</div> <div>(Pesticides)</div> <div>608 /</div> <div>8082</div> <div>(PCBs)</div> <div>624 /</div> <div>8260</div> <div>(Volatile Organics)</div> <div>625 /</div> <div>8270</div> <div>(Semi Volatile Organics)</div> <div>TL/C Metals (CAC Title 22)</div> <div>STLC Metals (CAC Title 22)</div> <div>TLCP (RCRA) Metals Organics</div> <div>Cd Cr Cu Pb Ni Ag Zn</div> <div>PH EC TSS TDS</div> </div> </div>									
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RELINQUISHED BY				DATE/TIME		RECEIVED BY	
Signature				7-1-04		Signature	
Print				14:40		Print	
Company:						Company:	
Signature						Signature	
Print						Print	
Company:						Company:	
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Company:						Company:	
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Company:						Company:	

\*Container Types: B=Brass Tube; V=VOA; G=Glass; P=Plastic; O=Other (list)

Tamper-Proof Seal Intact: Yes No N/A Correct Containers: (Yes No N/A)

Sample(s): Cold Ambient Warm VOAs w/ZHS: Yes No N/A

All Samples Properly Preserved: Yes No N/A

Disposal: N/C (aqueous) \*EMA (@\$1.00/sample) Return Hold

Turnaround Time: 24 hr 48 hr 3 day 4 day 5 day Normal

Comments:

\*EMA reserves the right to return samples that do not match our waste profile.

White - EMA

Canary - Accounting

Pink - Client (w/Report)

Goldenrod - Client (Relinquish Samples)

EnviroMatrix



Analytical, Inc.

29 March 2005

Wiedlin & Associates

EMA Log #: 0501289

Attn: Matt Wiedlin

4325 Corte de Sausalito

San Diego, CA 92130

**Project Name: Peaceful Valley**

Enclosed are the results of analyses for samples received by the laboratory on 01/27/05 16:34. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

A handwritten signature in black ink, appearing to read 'Dan Verdon', is written over a horizontal line.

**Dan Verdon**

**Laboratory Director**

CA ELAP Certification #: 2564

4340 Viewridge Avenue, Suite A - San Diego, California 92123 - (858) 560-7717 - Fax (858) 560-7763  
**Analytical Chemistry Laboratory**

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0501289

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PV-1	0501289-01	Water	01/27/05 14:10	01/27/05 16:34
PV-2	0501289-02	Water	01/27/05 08:40	01/27/05 16:34
PV-3	0501289-03	Water	01/27/05 11:25	01/27/05 16:34
PV-4	0501289-04	Water	01/27/05 13:52	01/27/05 16:34
D	0501289-05	Water	01/27/05 11:55	01/27/05 16:34
E	0501289-06	Water	01/27/05 10:55	01/27/05 16:34
J	0501289-07	Water	01/27/05 09:10	01/27/05 16:34
OW-7	0501289-08	Water	01/27/05 09:51	01/27/05 16:34

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0501289

### Conventional Chemistry Parameters by Standard/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>PV-1 (0501289-01) Water</b> Sampled: 01/27/05 14:10 Received: 01/27/05 16:34									
Nitrate as N	4.59	0.25	mg/l	5	5012812	01/28/05	01/28/05	SM4500 NO3 E	
pH	7.04	0.10	pH Units	1	5012716	01/27/05	01/27/05	EPA 150.1	
Total Dissolved Solids	933	20	mg/l	"	5012704	01/28/05	01/31/05	SM2540 C	
<b>PV-2 (0501289-02) Water</b> Sampled: 01/27/05 08:40 Received: 01/27/05 16:34									
Nitrate as N	ND	0.05	mg/l	1	5012812	01/28/05	01/28/05	SM4500 NO3 E	
pH	8.06	0.10	pH Units	"	5012716	01/27/05	01/27/05	EPA 150.1	
Total Dissolved Solids	749	20	mg/l	"	5012704	01/28/05	01/31/05	SM2540 C	
<b>PV-3 (0501289-03) Water</b> Sampled: 01/27/05 11:25 Received: 01/27/05 16:34									
Nitrate as N	4.93	0.50	mg/l	10	5012812	01/28/05	01/28/05	SM4500 NO3 E	
pH	6.69	0.10	pH Units	1	5012716	01/27/05	01/27/05	EPA 150.1	
Total Dissolved Solids	736	20	mg/l	"	5012704	01/28/05	01/31/05	SM2540 C	
<b>PV-4 (0501289-04) Water</b> Sampled: 01/27/05 13:52 Received: 01/27/05 16:34									
Nitrate as N	12.1	1.25	mg/l	25	5012812	01/28/05	01/28/05	SM4500 NO3 E	
pH	7.09	0.10	pH Units	1	5012716	01/27/05	01/27/05	EPA 150.1	
Total Dissolved Solids	1130	20	mg/l	"	5012704	01/28/05	01/31/05	SM2540 C	
<b>D (0501289-05) Water</b> Sampled: 01/27/05 11:55 Received: 01/27/05 16:34									
Nitrate as N	5.15	0.50	mg/l	10	5012812	01/28/05	01/28/05	SM4500 NO3 E	
pH	7.00	0.10	pH Units	1	5012716	01/27/05	01/27/05	EPA 150.1	
Total Dissolved Solids	1220	20	mg/l	"	5012704	01/28/05	01/31/05	SM2540 C	
<b>E (0501289-06) Water</b> Sampled: 01/27/05 10:55 Received: 01/27/05 16:34									
Nitrate as N	5.30	1.25	mg/l	25	5012812	01/28/05	01/28/05	SM4500 NO3 E	
pH	7.00	0.10	pH Units	1	5012716	01/27/05	01/27/05	EPA 150.1	
Total Dissolved Solids	918	20	mg/l	"	5012704	01/28/05	01/31/05	SM2540 C	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0501289

### Conventional Chemistry Parameters by Standard/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>J (0501289-07) Water    Sampled: 01/27/05 09:10    Received: 01/27/05 16:34</b>									
Nitrate as N	0.90	0.10	mg/l	2	5012812	01/28/05	01/28/05	SM4500 NO3 E	
pH	7.00	0.10	pH Units	1	5012716	01/27/05	01/27/05	EPA 150.1	
Total Dissolved Solids	1270	20	mg/l	"	5012704	01/28/05	01/31/05	SM2540 C	
<b>OW-7 (0501289-08) Water    Sampled: 01/27/05 09:51    Received: 01/27/05 16:34</b>									
Nitrate as N	14.7	1.25	mg/l	25	5012812	01/28/05	01/28/05	SM4500 NO3 E	
pH	6.62	0.10	pH Units	1	5012716	01/27/05	01/27/05	EPA 150.1	
Total Dissolved Solids	546	20	mg/l	"	5012704	01/28/05	01/31/05	SM2540 C	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0501289

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5012704</b>										
<b>Duplicate (5012704-DUP1)</b>		<b>Source: 0501263-01</b>		<b>Prepared: 01/27/05</b>		<b>Analyzed: 01/31/05</b>				
Total Dissolved Solids	2420	20	mg/l		2450			1	20	
<b>Reference (5012704-SRM1)</b>				<b>Prepared: 01/27/05</b>		<b>Analyzed: 01/31/05</b>				
Total Dissolved Solids	303	20	mg/l		315	96	86-114			
<b>Batch 5012716</b>										
<b>Duplicate (5012716-DUP1)</b>		<b>Source: 0501289-08</b>		<b>Prepared &amp; Analyzed: 01/27/05</b>						
pH	6.65	0.10	pH Units		6.62			0.5	20	
<b>Reference (5012716-SRM1)</b>				<b>Prepared &amp; Analyzed: 01/27/05</b>						
pH	8.84	0.10	pH Units		9.10	97	97-103			
<b>Batch 5012812</b>										
<b>Blank (5012812-BLK1)</b>				<b>Prepared &amp; Analyzed: 01/28/05</b>						
Nitrate as N	ND	0.05	mg/l							
<b>LCS (5012812-BS1)</b>				<b>Prepared &amp; Analyzed: 01/28/05</b>						
Nitrate as N	0.44	0.05	mg/l		0.500	88	80-120			
<b>LCS Dup (5012812-BSD1)</b>				<b>Prepared &amp; Analyzed: 01/28/05</b>						
Nitrate as N*	0.44	0.05	mg/l		0.500	88	80-120	0	20	
<b>Duplicate (5012812-DUP1)</b>		<b>Source: 0501289-02</b>		<b>Prepared &amp; Analyzed: 01/28/05</b>						
Nitrate as N	ND	0.05	mg/l		0.02			67	20	QR-04

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0501289

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5012812</b>										
<b>Matrix Spike (5012812-MS1)</b>		<b>Source: 0501289-02</b>			<b>Prepared &amp; Analyzed: 01/28/05</b>					
Nitrate as N	0.51	0.05	mg/l	0.500	0.02	98	80-120			
<b>Matrix Spike Dup (5012812-MSD1)</b>		<b>Source: 0501289-02</b>			<b>Prepared &amp; Analyzed: 01/28/05</b>					
Nitrate as N	0.50	0.05	mg/l	0.500	0.02	96	80-120	2	20	
<b>Reference (5012812-SRM1)</b>					<b>Prepared &amp; Analyzed: 01/28/05</b>					
Nitrate as N	6.70	0.50	mg/l	6.49		103	89-106			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0501289

### Notes and Definitions

QR-04 The RPD between the sample and sample duplicate is not valid since both results are below the reporting limit for this analyte.

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EnviroMatrix



Analytical, Inc.



**Analytical, Inc.**

**Analytical, Inc.**

EnviroMatrix



Analytical, Inc.

23 February 2005

Wiedlin & Associates  
Attn: Matt Wiedlin  
4325 Corte de Sausalito  
San Diego, CA 92130

**EMA Log #: 0502230**

**Project Name: Peaceful Valley**

Enclosed are the results of analyses for samples received by the laboratory on 02/16/05 11:30. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

**Dan Verdon**  
**Laboratory Director**

CA ELAP Certification #: 2564

4340 Viewridge Avenue, Suite A - San Diego, California 92123 - (858) 560-7717 - Fax (858) 560-7763  
**Analytical Chemistry Laboratory**

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0502230

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PV-4-A	0502230-01	Water	02/15/05 10:26	02/16/05 11:30
PV-4-P	0502230-02	Water	02/15/05 16:13	02/16/05 11:30

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0502230

### Conventional Chemistry Parameters by Standard/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>PV-4-A (0502230-01) Water    Sampled: 02/15/05 10:26    Received: 02/16/05 11:30</b>									
Nitrate as N	11.0	1.25	mg/l	25	5021618	02/16/05	02/17/05	SM4500 NO3 E	
Total Dissolved Solids	1060	20	"	1	5021702	02/17/05	02/18/05	SM2540 C	
<b>PV-4-P (0502230-02) Water    Sampled: 02/15/05 16:13    Received: 02/16/05 11:30</b>									
Nitrate as N	9.75	1.25	mg/l	25	5021618	02/16/05	02/17/05	SM4500 NO3 E	
Total Dissolved Solids	1060	20	"	1	5021702	02/17/05	02/18/05	SM2540 C	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0502230

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5021618</b>										
<b>Blank (5021618-BLK1)</b>				Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	ND	0.05	mg/l							
<b>LCS (5021618-BS1)</b>				Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	0.47	0.05	mg/l	0.500		94	80-120			
<b>LCS Dup (5021618-BSD1)</b>				Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	0.52	0.05	mg/l	0.500		104	80-120	10	20	
<b>Duplicate (5021618-DUP1)</b>				Source: 0502191-02		Prepared: 02/16/05 Analyzed: 02/17/05				
Nitrate as N	ND	0.05	mg/l		ND				20	
<b>Matrix Spike (5021618-MS1)</b>				Source: 0502191-02		Prepared: 02/16/05 Analyzed: 02/17/05				
Nitrate as N	0.59	0.05	mg/l	0.500	ND	118	80-120			
<b>Matrix Spike Dup (5021618-MSD1)</b>				Source: 0502191-02		Prepared: 02/16/05 Analyzed: 02/17/05				
Nitrate as N	0.60	0.05	mg/l	0.500	ND	120	80-120	2	20	
<b>Batch 5021702</b>										
<b>Duplicate (5021702-DUP1)</b>				Source: 0502202-01		Prepared: 02/17/05 Analyzed: 02/18/05				
Total Dissolved Solids	1080	20	mg/l		1040			4	20	
<b>Reference (5021702-SRM1)</b>				Prepared: 02/17/05 Analyzed: 02/18/05						
Total Dissolved Solids	271	20	mg/l	296		92	90-110			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: Peaceful Valley

EMA Log #: 0502230

### Notes and Definitions

ND      Analyte NOT DETECTED at or above the reporting limit  
NR      Not Reported  
dry      Sample results reported on a dry weight basis  
RPD      Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EnviroMatrix



Analytical, Inc.



**Analytical, Inc.**—

**Analytical, Inc.**

4340 Viewridge Ave., Ste. A • San Diego, CA 92123 • Phone (858) 560-7717 • Fax (858) 560-7763

## REQUESTED ANALYSIS

**Billing Address:**


**\*EMA reserves the right to return samples that do not match our waste promise.**

\*EPA reserves the right to return samples that do not match our waste profile.

## White • EMA

## Canary - Accounting

**Pink - Client (w/Report)**

### Goldenrod - Client (Relinquish Samples)

EnviroMatrix



Analytical, Inc.

25 February 2005

Wiedlin & Associates

EMA Log #: 0502242

Attn: Matt Wiedlin

4325 Corte de Sausalito

San Diego, CA 92130

Project Name: [none]

Enclosed are the results of analyses for samples received by the laboratory on 02/17/05 10:26. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

Dan Verdon

Laboratory Director

CA ELAP Certification #: 2564

4340 Viewridge Avenue, Suite A - San Diego, California 92123 - (858) 560-7717 - Fax (858) 560-7763  
Analytical Chemistry Laboratory

Client Name: Wiedlin & Associates  
Project Name: [none]

EMA Log #: 0502242

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PV-4-16	0502242-01	Water	02/16/05 09:05	02/17/05 10:26

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: [none]

EMA Log #: 0502242

### Conventional Chemistry Parameters by Standard/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PV-4-16 (0502242-01) Water Sampled: 02/16/05 09:05 Received: 02/17/05 10:26									
Nitrate as N	10.5	1.25	mg/l	25	5021618	02/16/05	02/17/05	SM4500 NO3 E	
Total Dissolved Solids	1080	20	"	1	5022319	02/23/05	02/25/05	SM2540 C	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: [none]

EMA Log #: 0502242

### Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5021618</b>										
<b>Blank (5021618-BLK1)</b>				Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	ND	0.05	mg/l							
<b>LCS (5021618-BS1)</b>				Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	0.47	0.05	mg/l	0.500		94	80-120			
<b>LCS Dup (5021618-BSD1)</b>				Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	0.52	0.05	mg/l	0.500		104	80-120	10	20	
<b>Duplicate (5021618-DUP1)</b>		Source: 0502191-02		Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	ND	0.05	mg/l		ND				20	
<b>Matrix Spike (5021618-MS1)</b>		Source: 0502191-02		Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	0.59	0.05	mg/l	0.500	ND	118	80-120			
<b>Matrix Spike Dup (5021618-MSD1)</b>		Source: 0502191-02		Prepared: 02/16/05 Analyzed: 02/17/05						
Nitrate as N	0.60	0.05	mg/l	0.500	ND	120	80-120	2	20	
<b>Batch 5022319</b>										
<b>Duplicate (5022319-DUP1)</b>		Source: 0502242-01		Prepared: 02/23/05 Analyzed: 02/25/05						
Total Dissolved Solids	1090	20	mg/l		1080			0.9	20	
<b>Reference (5022319-SRM1)</b>				Prepared: 02/23/05 Analyzed: 02/25/05						
Total Dissolved Solids	281	20	mg/l	296		95	90-110			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EnviroMatrix



Analytical, Inc.

Client Name: Wiedlin & Associates  
Project Name: [none]

EMA Log #: 0502242

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

EnviroMatrix



Analytical, Inc.

# CHAIN-OF-CUSTODY RECORD



EnviroMatrix Analytical, Inc.

4340 Viewridge Ave., Ste. A • San Diego, CA 92123 • Phone (858) 560-7717 • Fax (858) 560-7763

## EMA DATE/TIME STAMP

EMA LOG #: 0502242

Client: WIEDLIN & Assoc

Address: Cam de Sausalito

Attn: SAN DIEGO, CA

Phone: 858 259 6732

Sampled by: DW CHAMBERS

Billing Address:

Project: PO #:

EMA ID #	Client Sample ID	Sample Date	Sample Time	Sample Matrix	Container(s) # Type*
1	PV-4-16	2/16/05	9:05	W	1 P
2					
3					
4					
5					
6					
7					
8					
9					
10					

## REQUESTED ANALYSIS

418.1 (TRPH)	Oil & Grease 413.1 413.2 1664	TPH (8015B) Gas Disc	TPH-Extended 8015B ASTM D2887	602 / 8021 BTXE MTBE	601 / 8021 (Purgeable Halocarbons)	608 / 8081 (Pesticides)	608 / 8082 (PCBs)	624 / 8260 (Volatile Organics)	625 / 8270 (Semi Volatile Organics)	TTL Metals (CAC Title 22)	STL Metals (CAC Title 22)	TCLP (RCRA) Metals Organics	Cd Cr Cu Pb Ni Ag Zn	PH EC TSS TDS	Handwritten: 2/17/05
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*Container Types: B=Brass Tube; V=VOA; G=Glass; P=Plastic; O=Other (list) Tamper-Proof Seals Intact: Yes No N/A Correct Containers: Yes No VOA's w/ZHS: Yes No N/A		RELINQUISHED BY Signature: <i>DW Chambers</i> Print: DW CHAMBERS Company: WIA / CES	DATE/TIME 2-17-05 10:26	RECEIVED BY Signature: <i>[Signature]</i> Print: <i>[Signature]</i> Company: <i>[Signature]</i>
All Samples Properly Preserved: Yes No N/A Disposal (aqueous) *EMA (@\$5.00/sample) Return Hold Turnaround Time: 24 hr 48 hr 3 day 4 day 5 day Normal		Signature: _____ Print: _____ Company: _____		
Comments:		Signature: _____ Print: _____ Company: _____		
Signature: _____ Print: _____ Company: _____		Signature: _____ Print: _____ Company: _____		

\*EMA reserves the right to return samples that do not match our waste profile.

White - EMA

Canary - Accounting

Pink - Client (w/Report)

Goldenrod - Client (Relinquish Samples)